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DSR KARIS NORTH
CONSULTING INC.
ENGINEERING REIMAGINED

From: Dale J. Richardson, Director
DSR Karis North Consulting Inc.
8 The Green, Ste A
Dover, DE 19901

April 3, 2023

To: Nevada Law Enforcement

Re: Authorization to start criminal complaints based on research

Dear Law Enforcement Agent,

DSR Karis North Consulting Inc., a Delaware Corporation has attached the report "THE ENGINEERING OF BIOTERRORISM, CHILD TRAFFICKING, TREASON AND THE CRIME OF AGGRESSION UPDATE II" to any Nevada Law Enforcement agency for the purposes of reporting the criminal activity contained therein or any other unlawful activity in the United States of America, Canada or any other location as needed. Permission is hereby granted for the aforementioned reasons and such actions necessary for reporting crimes outlined in Executive Order on Imposing Certain Sanctions in the Event of Foreign Interference in a United States Election issued September 12, 2018. Authorization is granted to the person delivering this information package to use the information attached to this documentation for the purposes of filing a complaint. Should they choose to give consent, authorization is granted to have any statement they provide to be used as evidence and any other person who chooses to place a statement in support of the complaint made by DSR Karis North Consulting Inc..

Evidence will be pulled from the following files in the jurisdictions mentioned: Chestermere RCMP file# #2020-922562,. RCMP File# 2022-1782862, 2023-1169539 forgery, 2023-147546, 2023-179141 human trafficking (RCMP Battleford), 2023-70016 Sexual Assault(RCMP Turner Valley, AB), 2023-111338 human trafficking (RCMP Turner Valley, AB), 23-1588 culpable negligence (covid related), 23-1430 Sexual Assault/human trafficking, 23-1430 Culpable negligence (Volusia County Sheriff, Florida), #223230811 Criminal Harassment/ Human Trafficking agency Assist (Austin Texas Police Department), Calgary Police Service File #22453817 and #22453637, RCMP file 20221414593, 2023-72400 (torture, Chestermere RCMP), 2023-59269, 2023-59284 (Criminal Negligence, Treason Chestermere RCMP), 2022-1715002 (RCMP Alberta), North Charleston Police Department #2022023800 Aggravated Domestic Assault with a Firearm, 2022023857 intimidation of a witness. This can be found from the department) and #23-0011116 Sexual Assault (Austin Police Department). San Antonio PD #22273597. RCMP HQ in Ottawa has been advised to oversee the torture investigations in North Battleford because the torture investigation has been referred to the jurisdiction that tortured the victims. Ottawa has also been advised to overlook criminal intimidation of a witness complaint (RCMP file # 2023-272542) arising from the criminal negligence and treason complaints arising out of the aforementioned research named in this documentation.

Volusia County Sheriff Michael J. Chitwood, Deputy Sheriffs V. Girwood and K. Darcy are named in the complaints. The failure of the Volusia County Sheriff Michael J. Chitwood and the aforementioned Deputy Sheriffs to do their lawful duty has resulted in the commission of both state, federal and international crimes as outlined in the attached documentation. Any failure to properly file the attached documentation will result in prosecution to the fullest extent of the law.

The list of U.S. Complaints sent to the Salt Lake City FBI field office is attached to this letter as was a similar complaint made in Barrie Ontario based on the same information.

Dale J. Richardson
Director
DSR Karis North Consulting Inc.

Nevada State Criminal Codes

1. NRS 196.010 Treason.

1. Treason against the people of the State consists in:

(a) Levying war against the people of the State;

(b) Adhering to its enemies; or

(c) Giving them aid and comfort.

2. Treason is a category B felony and is punishable by imprisonment in the state prison for a minimum term of not less than 2 years and a maximum term of not more than 10 years.

3. A person must not be convicted for treason unless upon the testimony of two witnesses to the same overt act or by confession in open court.

[1911 C&P § 43; RL § 6308; NCL § 9992]—(NRS A 1967, 459; 1973, 1803; 1995, 1170)

2. NRS 196.020 "Levying war" defined.

To constitute levying war against the State an actual act of war must be committed. To conspire to levy war is not enough. When persons arise in insurrection with intent to prevent, in general, by force and intimidation, the execution of a statute of this state, or to force its repeal, they shall be guilty of levying war. But an endeavor, although by numbers and force of arms, to resist the execution of a law in a single instance, and for a private purpose, is not levying war.

[1911 C&P § 44; RL § 6309; NCL § 9993]

3. NRS 196.030 Misprision of treason.

A person who has knowledge of the commission of treason, who conceals the crime, and does not, as soon as may be, disclose the treason to the Governor or a justice of the Supreme Court or a judge of the Court of Appeals or the district court, is guilty of misprision of treason which is a category C felony and shall be punished as provided in NRS 193.130.

[1911 C&P § 45; RL § 6310; NCL § 9994]—(NRS A 1967, 460; 1979, 1417; 1995, 1170; 2013, 1763)

4. NRS 197.130 False report by public officer.

Every public officer who shall knowingly make any false or misleading statement in any official report or statement, under circumstances not otherwise prohibited by law, shall be guilty of a gross misdemeanor.

[1911 C&P § 84; RL § 6349; NCL § 10033]

5. NRS 197.200 Oppression under color of office.

1. An officer, or a person pretending to be an officer, who unlawfully and maliciously, under pretense or color of official authority:

(a) Arrests or detains a person against the person's will;

(b) Seizes or levies upon another's property;

(c) Dispossesses another of any lands or tenements; or

(d) Does any act whereby the person, property or rights of another person are injured, commits oppression.

2. An officer or person committing oppression shall be punished:

(a) Where physical force or the immediate threat of physical force is used, for a category D felony as provided in NRS 193.130.

(b) Where no physical force or immediate threat of physical force is used, for a gross misdemeanor.

[1911 C&P § 541; RL § 6806; NCL § 10487]—(NRS A 1967, 462; 1995, 1172)

6. NRS 197.220 Other violations by officers.

Every public officer or other person who shall willfully disobey any provision of law regulating his or her official conduct in cases for which no other punishment is provided shall be guilty of a misdemeanor.

[1911 C&P § 563; RL § 6828; NCL § 10508]

7. NRS 199.230 Preventing or dissuading person from testifying or producing evidence.

A person who, by persuasion, force, threat, intimidation, deception or otherwise, and with the intent to obstruct the course of justice, prevents or attempts to prevent another person from appearing before any court, or person authorized to subpoena witnesses, as a witness in any action, investigation or other official proceeding, or causes or induces another person to be absent from such a proceeding or evade the process which requires the person to appear as a witness to testify or produce a record, document or other object, shall be punished:

1. Where physical force or the immediate threat of physical force is used, for a category D felony as provided in NRS 193.130.

2. Where no physical force or immediate threat of physical force is used, for a gross misdemeanor.

[1911 C&P § 94; RL § 6359; NCL § 10043]—(NRS A 1967, 465; 1979, 1421; 1983, 1683; 1995, 1175)

8. NRS 199.240 Bribing or intimidating witness to influence testimony.

1. Gives, offers or promises directly or indirectly any compensation, gratuity or reward to any witness or person who may be called as a witness in an official proceeding, upon an agreement or understanding that his or her testimony will be thereby influenced; or

2. Uses any force, threat, intimidation or deception with the intent to:

(a) Influence the testimony of any witness or person who may be called as a witness in an official proceeding;

(b) Cause or induce him or her to give false testimony or to withhold true testimony; or

(c) Cause or induce him or her to withhold a record, document or other object from the proceeding, is guilty of a category C felony and shall be punished as provided in NRS 193.130, and may be further punished by a fine of not more than $50,000.

[1911 C&P § 56; RL § 6321; NCL § 10005]—(NRS A 1967, 465; 1979, 1421; 1983, 1683; 1995, 1176)

9. NRS 199.242 Limitations on defenses to prosecution for influencing testimony of witness.

It is not a defense to a prosecution under NRS 199.230 or 199.240 to show that:

1. An official proceeding was not pending or about to be instituted; or

2. The testimony sought or the record, document or other object to have been produced would have been legally privileged or inadmissible in evidence.

(Added to NRS by 1983, 1682; A 1985, 247))

10. NRS 200.010 “Murder” defined

Murder is the unlawful killing of a human being:

1. With malice aforethought, either express or implied;

2. Caused by a controlled substance which was sold, given, traded or otherwise made available to a person in violation of chapter 453 of NRS; or

3. Caused by a violation of NRS 453.3325. The unlawful killing may be effected by any of the various means by which death may be occasioned.

[1911 C&P § 119; RL § 6384; NCL § 10066]—(NRS A 1983, 512; 1985, 1598; 1989, 589; 2005, 1059)

11. NRS 200.020 Malice: Express and implied defined.

1. Express malice is that deliberate intention unlawfully to take away the life of a fellow creature, which is manifested by external circumstances capable of proof.

2. Malice shall be implied when no considerable provocation appears, or when all the circumstances of the killing show an abandoned and malignant heart.

[1911 C&P § 120; A 1915, 67; 1919 RL § 6385; NCL § 10067]

12. NRS 200.030 Degrees of murder; penalties.

1. Murder of the first degree is murder which is:

(a) Perpetrated by means of poison, lying in wait or torture, or by any other kind of willful, deliberate and premeditated killing;

(b) Committed in the perpetration or attempted perpetration of sexual assault, kidnapping, arson, robbery, burglary, invasion of the home, sexual abuse of a child, sexual molestation of a child under the age of 14 years, child abuse or abuse of an older person or vulnerable person pursuant to NRS 200.5099;

(c) Committed to avoid or prevent the lawful arrest of any person by a peace officer or to effect the escape of any person from legal custody;

(d) Committed on the property of a public or private school, at an activity sponsored by a public or private school or on a school bus while the bus was engaged in its official duties by a person who intended to create a great risk of death or substantial bodily harm to more than one person by means of a weapon, device or course of action that would normally be hazardous to the lives of more than one person; or

(e) Committed in the perpetration or attempted perpetration of an act of terrorism.

2. Murder of the second degree is all other kinds of murder.

3. The jury before whom any person indicted for murder is tried shall, if they find the person guilty thereof, designate by their verdict whether the person is guilty of murder of the first or second degree.

4. A person convicted of murder of the first degree is guilty of a category A felony and shall be punished:

(a) By death, only if one or more aggravating circumstances are found and any mitigating circumstance or circumstances which are found do not outweigh the aggravating circumstance or circumstances, unless a court has made a finding pursuant to NRS 174.098 that the defendant is a person with an intellectual disability and has stricken the notice of intent to seek the death penalty; or

(b) By imprisonment in the state prison:

(1) For life without the possibility of parole;

(2) For life with the possibility of parole, with eligibility for parole beginning when a minimum of 20 years has been served; or

(3) For a definite term of 50 years, with eligibility for parole beginning when a minimum of 20 years has been served. A determination of whether aggravating circumstances exist is not necessary to fix the penalty at imprisonment for life with or without the possibility of parole.

5. A person convicted of murder of the second degree is guilty of a category A felony and shall be punished by imprisonment in the state prison:

(a) For life with the possibility of parole, with eligibility for parole beginning when a minimum of 10 years has been served; or

(b) For a definite term of 25 years, with eligibility for parole beginning when a minimum of 10 years has been served.

6. As used in this section:

(a) "Act of terrorism" has the meaning ascribed to it in NRS 202.4415;

(b) "Child abuse" means physical injury of a nonaccidental nature to a child under the age of 18 years;

(c) "School bus" has the meaning ascribed to it in NRS 483.160;

(d) "Sexual abuse of a child" means any of the acts described in NRS 432B.100; and

(e) "Sexual molestation" means any willful and lewd or lascivious act, other than acts constituting the crime of sexual assault, upon or with the body, or any part or member thereof, of a child under the age of 14 years, with the intent of arousing, appealing to, or gratifying the lust, passions or sexual desires of the perpetrator or of the child.

[1911 C&P § 121; A 1915, 67; 1919, 468; 1947, 302; 1943 NCL § 10068]—(NRS A 1957, 330; 1959, 781; 1960, 399; 1961, 235, 486; 1967, 467, 1470; 1973, 1803; 1975, 1580; 1977, 864, 1541, 1627; 1989, 865, 1451; 1995, 257, 1181; 1999, 1335; 2003, 770, 2944; 2007, 74; 2013, 689)

13. NRS 200.033 Circumstances aggravating first degree murder.

The only circumstances by which murder of the first degree may be aggravated are:

1. The murder was committed by a person under sentence of imprisonment.

2. The murder was committed by a person who, at any time before a penalty hearing is conducted for the murder pursuant to NRS 175.552, is or has been convicted of:

(a) Another murder and the provisions of subsection 12 do not otherwise apply to that other murder; or

(b) A felony involving the use or threat of violence to the person of another and the provisions of subsection 4 do not otherwise apply to that felony.

For the purposes of this subsection, a person shall be deemed to have been convicted at the time the jury verdict of guilt is rendered or upon pronouncement of guilt by a judge or judges sitting without a jury.

3. The murder was committed by a person who knowingly created a great risk of death to more than one person by means of a weapon, device or course of action which would normally be hazardous to the lives of more than one person.

4. The murder was committed while the person was engaged, alone or with others, in the commission of, or an attempt to commit or flight after committing or attempting to commit, any robbery, arson in the first degree, burglary, invasion of the home or kidnapping in the first degree, and the person charged:

(a) Killed or attempted to kill the person murdered; or

(b) Knew or had reason to know that life would be taken or lethal force used.

5. The murder was committed to avoid or prevent a lawful arrest or to effect an escape from custody.

6. The murder was committed by a person, for himself or herself or another, to receive money or any other thing of monetary value.

7. The murder was committed upon a peace officer or firefighter who was killed while engaged in the performance of his or her official duty or because of an act performed in his or her official capacity, and the defendant knew or reasonably should have known that the victim was a peace officer or firefighter. For the purposes of this subsection, "peace officer" means:

(a) An employee of the Department of Corrections who does not exercise general control over offenders imprisoned within the institutions and facilities of the Department, but whose normal duties require the employee to come into contact with those offenders when carrying out the duties prescribed by the Director of the Department.

(b) Any person upon whom some or all of the powers of a peace officer are conferred pursuant to NRS 289.150 to 289.360, inclusive, when carrying out those powers.

8. The murder involved torture or the mutilation of the victim.

9. The murder was committed upon one or more persons at random and without apparent motive.

10. The murder was committed upon a person less than 14 years of age.

11. The murder was committed upon a person because of the actual or perceived race, color, religion, national origin, physical or mental disability, sexual orientation or gender identity or expression of that person.

12. The defendant has, in the immediate proceeding, been convicted of more than one offense of murder in the first or second degree. For the purposes of this subsection, a person shall be deemed to have been convicted of a murder at the time the jury verdict of guilt is rendered or upon pronouncement of guilt by a judge or judges sitting without a jury.

13. The person, alone or with others, subjected or attempted to subject the victim of the murder to nonconsensual sexual penetration immediately before, during or immediately after the commission of the murder. For the purposes of this subsection:

(a) "Nonconsensual" means against the victim's will or under conditions in which the person knows or reasonably should know that the victim is mentally or physically incapable of resisting, consenting or understanding the nature of his or her conduct,

including, but not limited to, conditions in which the person knows or reasonably should know that the victim is dead.

(b) "Sexual penetration" means cunnilingus, fellatio or any intrusion, however slight, of any part of the victim's body or any object manipulated or inserted by a person, alone or with others, into the genital or anal openings of the body of the victim, whether or not the victim is alive. The term includes, but is not limited to, anal intercourse and sexual intercourse in what would be its ordinary meaning.

14. The murder was committed on the property of a public or private school, at an activity sponsored by a public or private school or on a school bus while the bus was engaged in its official duties by a person who intended to create a great risk of death or substantial bodily harm to more than one person by means of a weapon, device or course of action that would normally be hazardous to the lives of more than one person. For the purposes of this subsection, "school bus" has the meaning ascribed to it in NRS 483.160.

15. The murder was committed with the intent to commit, cause, aid, further or conceal an act of terrorism. For the purposes of this subsection, "act of terrorism" has the meaning ascribed to it in NRS 202.4415.

(Added to NRS by 1977, 1542; A 1981, 521, 2011; 1983, 286; 1985, 1979; 1989, 1451; 1993, 76; 1995, 2, 138, 1490, 2705; 1997, 1293; 1999, 1336; 2001 Special Session, 229; 2003, 2945; 2005, 317; 2017, 1065)

14. NRS 200.310 Degrees.

1. A person who willfully seizes, confines, inveigles, entices, decoys, abducts, conceals, kidnaps or carries away a person by any means whatsoever with the intent to hold or detain, or who holds or detains, the person for ransom, or reward, or for the purpose of committing sexual assault, extortion or robbery upon or from the person, or for the purpose of killing the person or inflicting substantial bodily harm upon the person, or to exact from relatives, friends, or any other person any money or valuable thing for the return or disposition of the kidnapped person, and a person who leads, takes, entices, or carries away or detains any minor with the intent to keep, imprison, or confine the minor from his or her parents, guardians, or any other person having lawful custody of the minor, or with the intent to hold the minor to unlawful service, or perpetrate upon the person of the minor any unlawful act is guilty of kidnapping in the first degree which is a category A felony.

2. A person who willfully and without authority of law seizes, inveigles, takes, carries away or kidnaps another person with the intent to keep the person secretly imprisoned within the State, or for the purpose of conveying the person out of the State without authority of law, or in any manner held to service or detained against the person's will, is guilty of kidnapping in the second degree which is a category B felony.

[1:165:1947; 1943 NCL § 10612.05]—(NRS A 1959, 20; 1979, 39; 1987, 495; 1995, 1184)

15. NRS 200.320 Kidnapping in first degree: Penalties.

A person convicted of kidnapping in the first degree is guilty of a category A felony and shall be punished:

1. Where the kidnapped person suffers substantial bodily harm during the act of kidnapping or the subsequent detention and confinement or in attempted escape or escape therefrom, by imprisonment in the state prison:

(a) For life without the possibility of parole;

(b) For life with the possibility of parole, with eligibility for parole beginning when a minimum of 15 years has been served; or

(c) For a definite term of 40 years, with eligibility for parole beginning when a minimum of 15 years has been served.

2. Where the kidnapped person suffers no substantial bodily harm as a result of the kidnapping, by imprisonment in the state prison:

(a) For life with the possibility of parole, with eligibility for parole beginning when a minimum of 5 years has been served; or

(b) For a definite term of 15 years, with eligibility for parole beginning when a minimum of 5 years has been served.

[2:165:1947; 1943 NCL § 10612.06]—(NRS A 1967, 469; 1973, 1804; 1995, 1184)

16. NRS 200.330 Kidnapping in second degree: Penalties.

A person convicted of kidnapping in the second degree is guilty of a category B felony and shall be punished by imprisonment in the state prison for a minimum term of not less than 2 years and a maximum term of not more than 15 years, and may be further punished by a fine of not more than $15,000.

[3:165:1947; 1943 NCL § 10612.07]—(NRS A 1967, 469; 1979, 1425; 1995, 1185)

17. NRS 200.340 Penalty for aiding or abetting

1. A person who aids and abets kidnapping in the first degree is guilty of a category A felony and shall be punished for kidnapping in the first degree as provided in NRS 200.320.

2. A person who aids and abets kidnapping in the second degree is guilty of a category B felony and shall be punished by imprisonment in the state prison for a minimum term of not less than 2 years and a maximum term of not more than 15 years.

[4:165:1947; 1943 NCL § 10612.08]—(NRS A 1967, 470; 1995, 1185)

18. NRS 200.350 Where proceedings may be instituted; consent is not defense.

1. Any proceedings for kidnapping may be instituted either in the county where the offense was committed or in any county through or in which the person kidnapped or confined was taken or kept while under confinement or restraint.

2. Upon the trial for violation of NRS 200.310 to 200.350, inclusive, the consent thereto of the person kidnapped or confined shall not be a defense unless it appears satisfactorily to the jury that such person was above the age of 18 years and that the person's consent was not extorted by threats, duress or fraud.

[5:165:1947; 1943 NCL § 10612.09]

19. FALSE IMPRISONMENT - NRS 200.460 Definition; penalties.

1. False imprisonment is an unlawful violation of the personal liberty of another, and consists in confinement or detention without sufficient legal authority.

2. A person convicted of false imprisonment shall pay all damages sustained by the person so imprisoned, and, except as otherwise provided in this section, is guilty of a gross misdemeanor.

3. Unless a greater penalty is provided pursuant to subsection 4, if the false imprisonment is committed:

(a) By a prisoner in a penal institution without a deadly weapon; or

(b) By any other person with the use of a deadly weapon, the person convicted of such a false imprisonment is guilty of a category B felony and shall be punished by imprisonment in the state prison for a minimum term of not less than 1 year and a maximum term of not more than 6 years.

4. Unless a greater penalty is provided pursuant to subsection 5, if the false imprisonment is committed by using the person so imprisoned as a shield or to avoid arrest, the person convicted of such a false imprisonment is guilty of a category B felony and shall be punished by imprisonment in the state prison for a minimum term of not less than 1 year and a maximum term of not more than 15 years.

5. If the false imprisonment is committed by a prisoner who is in lawful custody or confinement with the use of a deadly weapon, the person convicted of such a false imprisonment is guilty of a category B felony and shall be punished by imprisonment in the state prison for a minimum term of not less than 1 year and a maximum term of not more than 20 years.

[1911 C&P § 175; RL § 6440; NCL § 10122]—(NRS A 1967, 472; 1981, 614; 1995, 1190; 2003, 387)

20. NRS 200.463 Involuntary servitude; penalties.

1. A person who knowingly subjects, or attempts to subject, another person to forced labor or services by:

(a) Causing or threatening to cause physical harm to any person;

(b) Physically restraining or threatening to physically restrain any person;

(c) Abusing or threatening to abuse the law or legal process;

(d) Knowingly destroying, concealing, removing, confiscating or possessing any actual or purported passport or other immigration document, or any other actual or purported government identification document, of the person;

(e) Extortion; or

(f) Causing or threatening to cause financial harm to any person, is guilty of holding a person in involuntary servitude.

2. Unless a greater penalty is provided in NRS 200.4631, a person who is found guilty of holding a person in involuntary servitude is guilty of a category B felony and shall be punished:

(a) Where the victim suffers substantial bodily harm while held in involuntary servitude or in attempted escape or escape therefrom, by imprisonment in the state prison for a minimum term of not less than 7 years and a maximum term of not more than 20 years, and may be further punished by a fine of not more than $50,000.

(b) Where the victim suffers no substantial bodily harm as a result of being held in involuntary servitude, by imprisonment in the state prison for a minimum term of not less than 5 years and a maximum term of not more than 20 years, and may be further punished by a fine of no

21. NRS 200.464 Recruiting, enticing, harboring, transporting, providing or obtaining another person to be held in involuntary servitude; benefiting from another person being held in involuntary servitude; penalty.

Unless a greater penalty is provided pursuant to NRS 200.4631 or 200.468, a person who knowingly:

1. Recruits, entices, harbors, transports, provides or obtains by any means, or attempts to recruit, entice, harbor, transport, provide or obtain by any means, another person, intending or knowing that the person will be held in involuntary servitude; or

2. Benefits, financially or by receiving anything of value, from participating in a violation of NRS 200.463 or 200.4631, is guilty of a category B felony and shall be punished by imprisonment in the state prison for a minimum term of not less than 1 year and a maximum term of not more than 15 years, and may be further punished by a fine of not more than $50,000.

(Added to NRS by 2005, 88; A 2007, 1268; 2013, 1854)

22. NRS 200.467 Trafficking in persons for financial gain; penalties.

1. A person shall not transport, procure transportation for or assist in the transportation of or procurement of transportation for another person into the State of Nevada who the person knows or has reason to know does not have the legal right to enter or remain in the United States in exchange for money or other financial gain.

2. A person who violates the provisions of subsection 1 is guilty of trafficking in persons and, unless a greater penalty is provided pursuant to NRS 200.464 or 200.468, shall be punished for a category B felony by imprisonment in the state prison for a minimum term of not less than 1 year and a maximum term of not more than 10 years, and may be further punished by a fine of not more than $50,000.

(Added to NRS by 2007, 1267)

23. NRS 200.468 Trafficking in persons for illegal purposes; penalty.

1. A person shall not transport, procure transportation for or assist in the transportation of or procurement of transportation for another person into the State of Nevada whom the person knows or has reason to know does not have the legal right to enter or remain in the United States with the intent to:

(a) Subject the person to involuntary servitude or any other act prohibited pursuant to NRS 200.463, 200.4631 or 200.465;

(b) Violate any state or federal labor law, including, without limitation, 8 U.S.C. § 1324a; or

(c) Commit any other crime which is punishable by not less than 1 year imprisonment in the state prison.

2. A person who violates the provisions of subsection 1 is guilty of trafficking in persons for illegal purposes and shall be punished for a category B felony by imprisonment in the state prison for a minimum term of not less than 1 year and a maximum term of not more than 20 years, and may be further punished by a fine of not more than $50,000.

(Added to NRS by 2007, 1267; A 2013, 1854)

24. NRS 200.471 Assault: Definitions; penalties.

1. As used in this section:

(a) "Assault" means:

(1) Unlawfully attempting to use physical force against another person; or

(2) Intentionally placing another person in reasonable apprehension of immediate bodily harm.

(b) "Fire-fighting agency" has the meaning ascribed to it in NRS 239B.020.

(c) "Officer" means:

(1) A person who possesses some or all of the powers of a peace officer;

(2) A person employed in a full-time salaried occupation of fire fighting for the benefit or safety of the public;

(3) A member of a volunteer fire department;

(4) A jailer, guard or other correctional officer of a city or county jail;

(5) A prosecuting attorney of an agency or political subdivision of the United States or of this State;

(6) A justice of the Supreme Court, judge of the Court of Appeals, district judge, justice of the peace, municipal judge, magistrate, court commissioner, master or referee, including a person acting pro tempore in a capacity listed in this subparagraph;

(7) An employee of this State or a political subdivision of this State whose official duties require the employee to make home visits;

(8) A civilian employee or a volunteer of a law enforcement agency whose official duties require the employee or volunteer to:

(I) Interact with the public;

(II) Perform tasks related to law enforcement; and

(III) Wear identification, clothing or a uniform that identifies the employee or volunteer as working or volunteering for the law enforcement agency;

(9) A civilian employee or a volunteer of a fire-fighting agency whose official duties require the employee or volunteer to:

(I) Interact with the public;

(II) Perform tasks related to fire fighting or fire prevention; and

(III) Wear identification, clothing or a uniform that identifies the employee or volunteer as working or volunteering for the fire-fighting agency; or

(10) A civilian employee or volunteer of this State or a political subdivision of this State whose official duties require the employee or volunteer to:

(I) Interact with the public;

(II) Perform tasks related to code enforcement; and

(III) Wear identification, clothing or a uniform that identifies the employee or volunteer as working or volunteering for this State or a political subdivision of this State.

(d) "Provider of health care" means a physician, a medical student, a perfusionist or a physician assistant licensed pursuant to chapter 630 of NRS, a practitioner of respiratory care, a homeopathic physician, an advanced practitioner of homeopathy, a homeopathic assistant, an osteopathic physician, a physician assistant licensed pursuant to chapter 633 of NRS, a podiatric physician, a podiatry hygienist, a physical therapist, a medical laboratory technician, an optometrist, a chiropractic physician, a chiropractic assistant, a doctor of Oriental medicine, a nurse, a student nurse, a certified nursing assistant, a nursing assistant trainee, a medication aide - certified, a dentist, a dental student, a dental hygienist, a dental hygienist student, a pharmacist, a pharmacy student, an intern pharmacist, an attendant on an ambulance or air ambulance, a psychologist, a social worker, a marriage and family therapist, a marriage and family therapist intern, a clinical professional counselor, a clinical professional counselor intern, a licensed dietitian, the holder of a license or a limited license issued under the provisions of chapter 653 of NRS, an emergency medical technician, an advanced emergency medical technician and a paramedic.

(e) "School employee" means a licensed or unlicensed person employed by a board of trustees of a school district pursuant to NRS 391.100 or 391.281.

(f) "Sporting event" has the meaning ascribed to it in NRS 41.630.

(g) "Sports official" has the meaning ascribed to it in NRS 41.630.

(h) "Taxicab" has the meaning ascribed to it in NRS 706.8816.

(I) "Taxicab driver" means a person who operates a taxicab.

(j) "Transit operator" means a person who operates a bus or other vehicle as part of a public mass transportation system.

2. A person convicted of an assault shall be punished:

(a) If paragraph (c) or (d) does not apply to the circumstances of the crime and the assault is not made with the use of a deadly weapon or the present ability to use a deadly weapon, for a misdemeanor.

(b) If the assault is made with the use of a deadly weapon or the present ability to use a deadly weapon, for a category B felony by imprisonment in the state prison for a minimum term of not less than 1 year and a maximum term of not more than 6 years, or by a fine of not more than $5,000, or by both fine and imprisonment.

(c) If paragraph (d) does not apply to the circumstances of the crime and if the assault is committed upon an officer, a provider of health care, a school employee, a taxicab driver or a transit operator who is performing his or her duty or upon a sports official based on the performance of his or her duties at a sporting event and the person charged knew or should have known that the victim was an officer, a provider of health care, a school employee, a taxicab driver, a transit operator or a sports official, for a gross misdemeanor, unless the assault is made with the use of a deadly weapon or the present ability to use a deadly weapon, then for a category B felony by imprisonment in the state prison for a minimum term of not less than 1 year and a maximum term of not more than 6 years, or by a fine of not more than $5,000, or by both fine and imprisonment.

(d) If the assault is committed upon an officer, a provider of health care, a school employee, a taxicab driver or a transit operator who is performing his or her duty or upon a sports official based on the performance of his or her duties at a sporting event by a probationer, a prisoner who is in lawful custody or confinement or a parolee, and the probationer, prisoner or parolee charged knew or should have known that the victim was an officer, a provider of health care, a school employee, a taxicab driver, a transit operator or a sports official, for a category D felony as provided in NRS 193.130, unless the assault is made with the use of a deadly weapon or the present ability to use a deadly weapon, then for a category B felony by imprisonment in the state prison for a minimum term of not less than 1 year and a maximum term of not more than 6 years, or by a fine of not more than $5,000, or by both fine and imprisonment.

(Added to NRS by 1971, 1384; A 1981, 903; 1985, 248; 1989, 1010; 1991, 124, 774; 1995, 21, 1190, 1321; 1997, 434; 1999, 140; 2001, 380, 986, 987; 2003, 354; 2005, 176; 2007, 1848, 3078; 2009, 74, 2991; 2011, 1336, 1513; 2013, 292, 952, 1763; 2017, 226; 2019, 1810, 2711)

25. NRS 200.481 Battery: Definitions; penalties.

1. As used in this section:

(a) “Battery” means any willful and unlawful use of force or violence upon the person of another.

(b) “Child” means a person less than 18 years of age.

(c) “Fire-fighting agency” has the meaning ascribed to it in NRS 239B.020.

(d) “Officer” means:

(1) A person who possesses some or all of the powers of a peace officer;

(2) A person employed in a full-time salaried occupation of fire fighting for the benefit or safety of the public;

(3) A member of a volunteer fire department;

(4) A jailer, guard, matron or other correctional officer of a city or county jail or detention facility;

(5) A prosecuting attorney of an agency or political subdivision of the United States or of this State;

(6) A justice of the Supreme Court, judge of the Court of Appeals, district judge, justice of the peace, municipal judge, magistrate, court commissioner, master or referee, including, without limitation, a person acting pro tempore in a capacity listed in this subparagraph;

(7) An employee of this State or a political subdivision of this State whose official duties require the employee to make home visits;

(8) A civilian employee or a volunteer of a law enforcement agency whose official duties require the employee or volunteer to:

(I) Interact with the public;

(II) Perform tasks related to law enforcement; and

(III) Wear identification, clothing or a uniform that identifies the employee or volunteer as working or volunteering for the law enforcement agency;

(9) A civilian employee or a volunteer of a fire-fighting agency whose official duties require the employee or volunteer to:

(I) Interact with the public;

(II) Perform tasks related to fire fighting or fire prevention; and

(III) Wear identification, clothing or a uniform that identifies the employee or volunteer as working or volunteering for the fire-fighting agency; or

(10) A civilian employee or volunteer of this State or a political subdivision of this State whose official duties require the employee or volunteer to:

(I) Interact with the public;

(II) Perform tasks related to code enforcement; and

(III) Wear identification, clothing or a uniform that identifies the employee or volunteer as working or volunteering for this State or a political subdivision of this State.

(e) “Provider of health care” has the meaning ascribed to it in NRS 200.471.

(f) “School employee” means a licensed or unlicensed person employed by a board of trustees of a school district pursuant to NRS 391.100 or 391.281.

(g) “Sporting event” has the meaning ascribed to it in NRS 41.630.

(h) “Sports official” has the meaning ascribed to it in NRS 41.630.

(I) “Strangulation” means intentionally impeding the normal breathing or circulation of the blood by applying pressure on the throat or neck or by blocking the nose or mouth of another person in a manner that creates a risk of death or substantial bodily harm.

(j) “Taxicab” has the meaning ascribed to it in NRS 706.8816.

(k) “Taxicab driver” means a person who operates a taxicab.

(l) “Transit operator” means a person who operates a bus or other vehicle as part of a public mass transportation system.

2. Except as otherwise provided in NRS 200.485, a person convicted of a battery, other than a battery committed by an adult upon a child which constitutes child abuse, shall be punished:

(a) If the battery is not committed with a deadly weapon, and no substantial bodily harm to the victim results, except under circumstances where a greater penalty is provided in this section or NRS 197.090, for a misdemeanor.

(b) If the battery is not committed with a deadly weapon, and either substantial bodily harm to the victim results or the battery is committed by strangulation, for a category C felony as provided in NRS 193.130.

(c) If:

(1) The battery is committed upon an officer, provider of health care, school employee, taxicab driver or transit operator who was performing his or her duty or upon a sports official based on the performance of his or her duties at a sporting event;

(2) The officer, provider of health care, school employee, taxicab driver, transit operator or sports official suffers substantial bodily harm or the battery is committed by strangulation; and

(3) The person charged knew or should have known that the victim was an officer, provider of health care, school employee, taxicab driver, transit operator or sports official, for a category B felony by imprisonment in the state prison for a minimum term of not less than 2 years and a maximum term of not more than 10 years, or by a fine of not more than $10,000, or by both fine and imprisonment.

(d) If the battery is committed upon an officer, provider of health care, school employee, taxicab driver or transit operator who is performing his or her duty or upon a sports official based on the performance of his or her duties at a sporting event and the person charged knew or should have known that the victim was an officer, provider of health care, school employee, taxicab driver, transit operator or sports official, for a gross misdemeanor, except under circumstances where a greater penalty is provided in this section.

(e) If the battery is committed with the use of a deadly weapon, and:

(1) No substantial bodily harm to the victim results, for a category B felony by imprisonment in the state prison for a minimum term of not less than 2 years and a maximum term of not more than 10 years, and may be further punished by a fine of not more than $10,000.

(2) Substantial bodily harm to the victim results or the battery is committed by strangulation, for a category B felony by imprisonment in the state prison for a minimum term of not less than 2 years and a maximum term of not more than 15 years, and may be further punished by a fine of not more than $10,000.

(f) If the battery is committed by a probationer, a prisoner who is in lawful custody or confinement or a parolee, without the use of a deadly weapon, whether or not substantial bodily harm results and whether or not the battery is committed by strangulation, for a category B felony by imprisonment in the state prison for a minimum term of not less than 1 year and a maximum term of not more than 6 years.

(g) If the battery is committed by a probationer, a prisoner who is in lawful custody or confinement or a parolee, with the use of a deadly weapon, and:

(1) No substantial bodily harm to the victim results, for a category B felony by imprisonment in the state prison for a minimum term of not less than 2 years and a maximum term of not more than 10 years.

(2) Substantial bodily harm to the victim results or the battery is committed by strangulation, for a category B felony by imprisonment in the state prison for a minimum term of not less than 2 years and a maximum term of not more than 15 years.

(Added to NRS by 1971, 1385; A 1973, 1444; 1975, 1063; 1977, 736; 1979, 213, 1427; 1981, 12, 614; 1983, 673; 1985, 248, 2171; 1987, 515; 1989, 1178; 1991, 154, 774; 1995, 22, 903, 1191, 1321, 1335; 1997, 435, 1180, 1813; 1999, 141; 2001, 381; 2003, 355; 2005, 178; 2009, 87; 2013, 1764; 2017, 228; 2019, 1812)

26. ACTS OF TERRORISM; WEAPONS OF MASS DESTRUCTION; LETHAL AGENTS; TOXINS; HOAX SUBSTANCES - NRS 202.441 Definitions.

As used in NRS 202.441 to 202.449, inclusive, unless the context otherwise requires, the words and terms defined in NRS 202.4415 to 202.4445, inclusive, have the meanings ascribed to them in those sections.

(Added to NRS by 1999, 3; A 2003, 2949; 2007, 996)

27. NRS 202.4415 “Act of terrorism” defined.

1. “Act of terrorism” means any act that involves the use or attempted use of sabotage, coercion or violence which is intended to:

(a) Cause great bodily harm or death to the general population; or

(b) Cause substantial destruction, contamination or impairment of:

(1) Any building or infrastructure, communications, transportation, utilities or services; or

(2) Any natural resource or the environment.

2. As used in this section, “coercion” does not include an act of civil disobedience.

(Added to NRS by 2003, 2947)

28. NRS 202.442 “Biological agent” defined.

“Biological agent” means any microorganism, virus, infectious substance or other biological substance, material or product, or any component or compound thereof, which is naturally

occurring, cultivated, engineered, processed, extracted or manufactured and which is capable of causing:

1. Death or substantial bodily harm;

2. Substantial deterioration or contamination of food, water, equipment, supplies or material of any kind; or

3. Substantial damage to natural resources or the environment.

(Added to NRS by 1999, 3; A 2003, 2949)

29. NRS 202.443 “Delivery system” defined.

“Delivery system” means any apparatus, equipment, implement, device or means of delivery which is specifically designed to send, disperse, release, discharge or disseminate any weapon of mass destruction, any biological agent, chemical agent, radioactive agent or other lethal agent or any toxin.

(Added to NRS by 1999, 3; A 2003, 2949)

30. NRS 202.4431 “For use as a weapon” defined.

1. “For use as a weapon” means having the capability to be used in a harmful or threatening manner.

2. The term does not include any act that is done lawfully for a prophylactic, protective or peaceful purpose.

(Added to NRS by 2003, 2947)

31. NRS 202.4433 “Material support” defined.

“Material support” means any financial, logistical, informational or other support or assistance intended to further an act of terrorism.

(Added to NRS by 2003, 2947)

32. NRS 202.4439 “Terrorist” defined.

“Terrorist” means a person who intentionally commits, causes, aids, furthers or conceals an act of terrorism or attempts to commit, cause, aid, further or conceal an act of terrorism.

(Added to NRS by 2003, 2948)

33. NRS 202.444 “Toxin” defined.

“Toxin” means any toxic substance, material or product, or any component or compound thereof, which is naturally occurring, cultivated, engineered, processed, extracted or manufactured and which is capable of causing:

1. Death or substantial bodily harm;

2. Substantial deterioration or contamination of food, water, equipment, supplies or material of any kind; or

3. Substantial damage to natural resources or the environment.

(Added to NRS by 1999, 3; A 2003, 2949)

34. NRS 202.4445 "Weapon of mass destruction" defined.

"Weapon of mass destruction" means any weapon or device that is designed or intended to create a great risk of death or substantial bodily harm to a large number of persons.

(Added to NRS by 2003, 2948)

35. NRS 202.445 Acts of terrorism or attempted acts of terrorism prohibited; penalties.

1. A person shall not knowingly or intentionally commit or cause an act of terrorism or attempt to commit or cause an act of terrorism.

2. A person shall not knowingly or intentionally:

(a) Aid, further or conceal or attempt to aid, further or conceal an act of terrorism;

(b) Assist, solicit or conspire with another person to commit, cause, aid, further or conceal an act of terrorism; or

(c) Provide material support with the intent that such material support be used, in whole or in part, to:

(1) Commit, cause, aid, further or conceal an act of terrorism; or

(2) Aid a terrorist or conceal a terrorist from detection or capture.

3. A person who violates subsection 1 is guilty of a category A felony and:

(a) Shall be punished by imprisonment:

(1) For life without the possibility of parole;

(2) For life with the possibility of parole, with eligibility for parole beginning when a minimum of 20 years has been served; or

(3) For a definite term of 50 years, with eligibility for parole beginning when a minimum of 20 years has been served; and

(b) Shall further be punished by a fine of at least $50,000 but not more than $100,000.

4. A person who violates subsection 2 is guilty of a category A felony and:

(a) Shall be punished by imprisonment:

(1) For life with the possibility of parole, with eligibility for parole beginning when a minimum of 10 years has been served; or

(2) For a definite term of 25 years, with eligibility for parole beginning when a minimum of 10 years has been served; and

(b) Shall be further punished by a fine of at least $25,000 but not more than $50,000.

5.In addition to any other penalty, the court shall order a person who violates the provisions of this section to pay restitution:

(a) To each victim for any injuries that are a result of the violation; and

(b) To the State of Nevada or a local government for any costs that arise from the violation.

(Added to NRS by 2003, 2948)

36. NRS 202.446 Certain acts related to weapons of mass destruction, lethal agents, toxins and delivery systems prohibited; penalties.

1. A person shall not knowingly:

(a) Develop, manufacture, produce, assemble, stockpile, transfer, transport, acquire, retain, store, test or possess any weapon of mass destruction, any biological agent, chemical agent, radioactive agent or other lethal agent, any toxin or any delivery system for use as a weapon; or

(b) Send, deliver, disperse, release, discharge, disseminate or use any weapon of mass destruction, any biological agent, chemical agent, radioactive agent or other lethal agent, any toxin or any delivery system:

(1) With the intent to cause harm, whether or not such harm actually occurs; or

(2) Under circumstances reasonably likely to cause harm, whether or not such harm actually occurs.

2. A person shall not knowingly:

(a) Attempt to do any act described in subsection 1; or

(b) Assist, solicit or conspire with another person to do any act described in subsection 1.

3. A person who violates any provision of subsection 1 is guilty of a category A felony and shall be punished:

(a) If the crime does not result in substantial bodily harm or death:

(1) By imprisonment in the state prison for life with the possibility of parole, with eligibility for parole beginning when a minimum of 10 years has been served, and shall further be punished by a fine of not more than $20,000; or

(2) By imprisonment in the state prison for a definite term of 25 years, with eligibility for parole beginning when a minimum of 10 years has been served, and shall further be punished by a fine of not more than $20,000.

(b) If the crime results in substantial bodily harm or death:

(1) By imprisonment in the state prison for life without the possibility of parole, and shall further be punished by a fine of not more than $50,000;

(2) By imprisonment in the state prison for life, with the possibility of parole, with eligibility for parole beginning when a minimum of 20 years has been served, and shall further be punished by a fine of not more than $50,000; or

(3) By imprisonment in the state prison for a definite term of 40 years, with eligibility for parole beginning when a minimum of 20 years has been served, and shall further be punished by a fine of not more than $50,000.

4. A person who violates any provision of subsection 2 is guilty of a category B felony and shall be punished by imprisonment in the state prison for a minimum term of not less than 2 years and a maximum term of not more than 15 years, and shall further be punished by a fine of not more than $10,000.

5. In addition to any other penalty, the court shall order a person who violates the provisions of this section to pay restitution:

(a) To each victim for any injuries that are a result of the violation; and

(b) To the State of Nevada or a local government for any costs that arise from the violation.

6. The provisions of this section do not apply to any act that is committed in a lawful manner and in the course of a lawful business, event or activity.

(Added to NRS by 1999, 3; A 2003, 2949)

37. NRS 207.190 Coercion.

1. It is unlawful for a person, with the intent to compel another to do or abstain from doing an act which the other person has a right to do or abstain from doing, to:

(a) Use violence or inflict injury upon the other person or any of the other person's family, or upon the other person's property, or threaten such violence or injury;

(b) Deprive the person of any tool, implement or clothing, or hinder the person in the use thereof; or

(c) Attempt to intimidate the person by threats or force.

2. A person who violates the provisions of subsection 1 shall be punished:

(a) Where physical force or the immediate threat of physical force is used, for a category B felony by imprisonment in the state prison for a minimum term of not less than 1 year and a maximum term of not more than 6 years, and may be further punished by a fine of not more than $5,000.

(b) Where no physical force or immediate threat of physical force is used, for a misdemeanor.

[1911 C&P § 475; RL § 6740; NCL § 10424]—(NRS A 1967, 522; 1979, 1455; 1995, 1239)

38. RACKETEERING - NRS 207.350 Definitions.

As used in NRS 207.350 to 207.520, inclusive, unless the context otherwise requires, the words and terms defined in NRS 207.360 to 207.390, inclusive, have the meanings ascribed to them in those sections.

(Added to NRS by 1983, 1495)

39. NRS 207.360 “Crime related to racketeering” defined.

“Crime related to racketeering” means the commission of, attempt to commit or conspiracy to commit any of the following crimes:

1. Murder;

2. Manslaughter, except vehicular manslaughter as described in NRS 484B.657;

3. Mayhem;

4. Battery which is punished as a felony;

5. Kidnapping;

6. Sexual assault;

7. Arson;

8. Robbery;

9. Taking property from another under circumstances not amounting to robbery;

10. Extortion;

11. Statutory sexual seduction;

12. Extortionate collection of debt in violation of NRS 205.322;

13. Forgery, including, without limitation, forgery of a credit card or debit card in violation of NRS 205.740;

14. Obtaining and using personal identifying information of another person in violation of NRS 205.463;

15. Establishing or possessing a financial forgery laboratory in violation of NRS 205.46513;

16.Any violation of NRS 199.280 which is punished as a felony;

17. Burglary;

18. Grand larceny;

19. Bribery or asking for or receiving a bribe in violation of chapter 197 or 199 of NRS which is punished as a felony;

20. Battery with intent to commit a crime in violation of NRS 200.400;

21. Assault with a deadly weapon;

22. Any violation of NRS 453.232, 453.316 to 453.339, inclusive, or NRS 453.375 to 453.401, inclusive;

23. Receiving or transferring a stolen vehicle;

24. Any violation of NRS 202.260, 202.275 or 202.350 which is punished as a felony;

25. Any violation of subsection 2 or 3 of NRS 463.360 or chapter 465 of NRS;

26. Receiving, possessing or withholding stolen goods valued at $650 or more;

27. Embezzlement of money or property valued at $650 or more;

28. Obtaining possession of money or property valued at $650 or more, or obtaining a signature by means of false pretenses;

29. Perjury or subornation of perjury;

30. Offering false evidence;

31. Any violation of NRS 201.300, 201.320, 201.360 or 201.395;

32. Any violation of NRS 90.570, 91.230 or 686A.290, or insurance fraud pursuant to NRS 686A.291;

33. Any violation of NRS 205.506, 205.920 or 205.930;

34. Any violation of NRS 202.445 or 202.446;

35. Any violation of NRS 205.377;

36. Involuntary servitude in violation of any provision of NRS 200.463 or 200.464 or a violation of any provision of NRS 200.465; or

37. Trafficking in persons in violation of any provision of NRS 200.467 or 200.468.

(Added to NRS by 1983, 1495; A 1989, 18, 160; 1991, 124, 161; 1997, 493; 1999, 2642; 2001, 1100; 2003, 2951; 2005, 79; 2009, 144; 2011, 173; 2013, 2434, 3697; 2017, 511; 2019, 2632, 4443)

40. NRS 207.370 “Criminal syndicate” defined

“Criminal syndicate” means any combination of persons, so structured that the organization will continue its operation even if individual members enter or leave the organization, which engages in or has the purpose of engaging in racketeering activity.

(Added to NRS by 1983, 1496)

41. NRS 207.380 “Enterprise” defined.

“Enterprise” includes:

1. Any natural person, sole proprietorship, partnership, corporation, business trust or other legal entity; and

2. Any union, association or other group of persons associated in fact although not a legal entity. The term includes illicit as well as licit enterprises and governmental as well as other entities.

(Added to NRS by 1983, 1496)

42. NRS 207.390 “Racketeering activity” defined.

“Racketeering activity” means engaging in at least two crimes related to racketeering that have the same or similar pattern, intents, results, accomplices, victims or methods of commission, or are otherwise interrelated by distinguishing characteristics and are not isolated incidents, if at least one of the incidents occurred after July 1, 1983, and the last of the incidents occurred within 5 years after a prior commission of a crime related to racketeering.

(Added to NRS by 1983, 1496)

43. NRS 207.400 Unlawful acts; penalties.

1. It is unlawful for a person:

(a) Who has with criminal intent received any proceeds derived, directly or indirectly, from racketeering activity to use or invest, whether directly or indirectly, any part of the proceeds, or the proceeds derived from the investment or use thereof, in the acquisition of:

(1) Any title to or any right, interest or equity in real property; or

(2) Any interest in or the establishment or operation of any enterprise.

(b) Through racketeering activity to acquire or maintain, directly or indirectly, any interest in or control of any enterprise.

(c) Who is employed by or associated with any enterprise to conduct or participate, directly or indirectly, in:

(1) The affairs of the enterprise through racketeering activity; or

(2) Racketeering activity through the affairs of the enterprise.

(d) Intentionally to organize, manage, direct, supervise or finance a criminal syndicate.

(e) Knowingly to incite or induce others to engage in violence or intimidation to promote or further the criminal objectives of the criminal syndicate.

(f) To furnish advice, assistance or direction in the conduct, financing or management of the affairs of the criminal syndicate with the intent to promote or further the criminal objectives of the syndicate.

(g) Intentionally to promote or further the criminal objectives of a criminal syndicate by inducing the commission of an act or the omission of an act by a public officer or employee which violates his or her official duty.

(h) To transport property, to attempt to transport property or to provide property to another person knowing that the other person intends to use the property to further racketeering activity.

(I) Who knows that property represents proceeds of, or is directly or indirectly derived from, any unlawful activity to conduct or attempt to conduct any transaction involving the property:

(1) With the intent to further racketeering activity; or

(2) With the knowledge that the transaction conceals the location, source, ownership or control of the property.

(j) To conspire to violate any of the provisions of this section.

2. A person who violates this section is guilty of a category B felony and shall be punished by imprisonment in the state prison for a minimum term of not less than 5 years and a maximum term of not more than 20 years, and may be further punished by a fine of not more than $25,000.

3. As used in this section, “unlawful activity” has the meaning ascribed to it in NRS 207.195.

(Added to NRS by 1983, 1496; A 1995, 1241; 2009, 145)

44. NRS 207.420 Criminal forfeiture: Property subject to forfeiture; substitution for unreachable property.

1. If the indictment or information filed regarding a violation of NRS 207.400 alleges that real or personal property was derived from, realized through, or used or intended for use in the course of the unlawful act and the extent of that property:

(a) The jury; or

(b) If the trial is without a jury, the court, shall, upon a conviction, determine at a separate hearing the extent of the property to be forfeited. If the indictment or information does not include such an allegation, the property is not subject to criminal forfeiture.

2. The property subject to criminal forfeiture pursuant to subsection 1 includes:

(a) Any title or interest acquired or maintained by the unlawful conduct;

(b) Any proceeds derived from the unlawful conduct;

(c) Any property or contractual right which affords a source of influence over any enterprise established, operated, controlled, participated in or conducted in violation of NRS 207.400;

(d) Any position, office, appointment, tenure or contract of employment:

(1) Which was acquired or maintained in violation of NRS 207.400;

(2) Through which the convicted person conducted or participated in the conduct of such unlawful affairs of an enterprise; or

(3) Which afforded the convicted person a source of influence or control over the affairs of an enterprise which the convicted person exercised in violation of NRS 207.400;

(e) Any compensation, right or benefit derived from a position, office, appointment, tenure or contract of employment that accrued to the convicted person during the period of unlawful conduct; and

(f) Any amount payable or paid under any contract for goods or services which was awarded or performed in violation of NRS 207.400.

3. If property which is ordered to be criminally forfeited pursuant to subsection 1:

(a) Cannot be located;

(b) Has been sold to a purchaser in good faith for value;

(c) Has been placed beyond the jurisdiction of the court;

(d) Has been substantially diminished in value by the conduct of the defendant;

(e) Has been commingled with other property which cannot be divided without difficulty or undue injury to innocent persons; or

(f) Is otherwise unreachable without undue injury to innocent persons, the court shall order the forfeiture of other property of the defendant up to the value of the property that is unreachable.

(Added to NRS by 1983, 1497)

45. NRS 207.430 Criminal forfeiture: Temporary restraining order to preserve property.

1. The prosecuting attorney may apply for, and a court may issue without notice or hearing, a temporary restraining order to preserve property which would be subject to criminal forfeiture under NRS 207.420 if:

(a) An indictment or information has been filed regarding a violation of NRS 207.400 and the extent of criminally forfeitable property is included therein or the court believes there is probable cause for such an inclusion;

(b) The property is in the possession or control of the party against whom the order will be entered; and

(c) The court determines that the nature of the property is such that it can be concealed, disposed of or placed beyond the jurisdiction of the court before a hearing on the matter.

2. A temporary restraining order which is issued without notice may be issued for not more than 10 days and may be extended only for good cause or by consent. The court shall provide notice and hold a hearing on the matter before the order expires.

(Added to NRS by 1983, 1499)

46. NRS 207.440 Criminal forfeiture: Orders to secure property.

1. After an information or indictment is filed regarding a violation of NRS 207.400, the prosecuting attorney may request the court to:

(a) Enter a restraining order or injunction;

(b) Require the execution of a satisfactory bond;

(c) Appoint a receiver; or

(d) Take any other necessary action, to secure property which is subject to criminal forfeiture.

2. The court shall, after a hearing for which notice was given to any person whose rights in the property proposed for forfeiture would be affected, order such an action if the prosecuting attorney shows by a preponderance of the evidence that the action is necessary to preserve the defendant's property which is subject to criminal forfeiture.

3. If no indictment or information has been filed regarding a violation of NRS 207.400, the court may, after such a hearing and upon a showing of the prosecuting attorney that:

(a) There is probable cause to believe that the property for which the order is sought would be subject to criminal forfeiture; and

(b) The requested order would not result in substantial and irreparable harm or injury to the party against whom the order is to be entered that outweighs the need to secure the property for the potential criminal forfeiture, order an action to secure the property. Such an order may not be effective for more than 90 days unless it is extended for good cause or an indictment or information is filed regarding a violation of NRS 207.400 and the extent of the criminally forfeitable property is listed therein.

(Added to NRS by 1983, 1498)

Statement of DSR Karis Consulting Inc.
by Dale J. Richardson, Director
For Royal Newfoundland Constabulary

1. I Dale J. Richardson the sole director of DSR Karis Consulting Inc. and making a statement for OPP and Barrie Police Service.

2. I am a mechanical engineering technologist with a Bachelor of Technology in Engineering and Applied Science from Memorial University of Newfoundland. I pioneered research into HVAC infection controls relative to the SARS-Cov-2 pandemic over the course of my degree. The research that I conducted over the course of my degree is the basis for this complaint. The research papers that were done during my Bachelor of Technology degree are published by Dorrance Publishing under the title COVID-19 and Negligent Engineering Practices; "Will This Kill People?: A Collection of Studies on HVAC Infection Controls Relating to COVID-19. This research is already available to the public.

3. Since the initial complaints were made on July 3, of 2020 I was unable to return to make a statement in relation to this matter for a number of reasons that are outlined in some related file numbers that will be listed at the end of the statement.

4. I have attached the written section of "The Engineering of Bioterrorism, Child Trafficking, Treason and the Crime of Aggression Update II (a preliminary report and analysis of risk) that is protected by United States copyright it is in the process of being published.

5. The basis of the criminal negligence complaint is that a hazard that increased the risk of injury and death was deliberately introduced into the infrastructure in the province of Ontario by the Royal College of Dental Surgeons of Ontario, and specifically in the City of Barrie and other areas under the jurisdiction of the Barrie Police Service, and province wide under the jurisdiction of the Ontario Provincial Police.

6. The Criminal code defines criminal negligence as: 219 (1) Every one is criminally negligent who

7. (a) in doing anything, or

8. (b) in omitting to do anything that it is his duty to do,

9. shows wanton or reckless disregard for the lives or safety of other persons

10. Duty is defined as 2) For the purposes of this section, duty means a duty imposed by law.

11. There is a lawful duty for the Newfoundland and Labrador Dental Association (NLDA), Public Health Agency of Canada (PHAC), Health Canada (HC), the Canadian Dental Association (CDA) and other medical and dental bodies to practice within the scope of their field which is in the area of health and not in the engineering

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sciences. The engineering sciences fall under the responsibility of engineers and technologists and their bodies. Professional Engineeres and Geoscientists of Newfoundland & Labrador (PEGNL) are at the forefront of those responsible for engineering provincially and Engineers Canada federally. Both Engineers Canada and PEGNL have failed to regulate the profession of engineering in a manner that is in the public interest and have deliberately caused increased risk of injury and death by allowing NLDA, CDA and the Public Health Agency of Canada to issue guidance on engineering controls for the SARS-Cov-2 pandemic. Rather than act within the public interest, nothing was done. Both PEGNL and Engineers Canada and their agents and/or affiliates failed to provide proper guidance with respect to HVAC engineering controls.

12. These actions mirrored what was done in the province of Saskatchewan and Alberta. This failure was also noted in the United States.

13. The research provided with this complaint is in the process of being published. It is protected by U.S. copyright and sits in the library of congress.

14. Brenda Lucki and RCMP HQ has received much of this information as had the Civilian Review and Complaints Commission.

15. Corporations Canada has refused to give corporate keys to DSR Karis Consulting Inc. and DSR Karis Inc. And has concealed evidence of these crimes that has affected the city of Barrie and the Province of Ontario.

16. The Ottawa Police Service has received a similar set of information which has been included with the evidence contained with this statement. The mail receipt has also been included as evidence, as what was provided to the FBI field office in Salt Lake City Utah.

17. Engineers Canada and the PEGNL are aware of my research and have been for some time. I am currently being unlawfully attacked in the trademark opposition board by Engineers Canada who is supported by the PEGNL. I have attached some related documentation to this complaint. This unlawful attack was made possible by the Federal Court of Canada and many of the agents who forged documents, committed fraud, facilitated human trafficking, suppressed information that demonstrated how a biological weapon could be distributed and made to look like a random outbreak, torture, murder, attempted murder and other gross crimes. Emily Price who was the case management agent for T-1404-20 had a large part in this matter as does a long list of judges in and out of Ottawa including the Chief Justice of the Federal Court of Canada, Chief Justice Paul S. Crampton and his agent Klara Trudeau. This information can be pulled from the RCMP files listed below. The contact for the Chestermere files is Cpl. Scott Smith.

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18. Not one shred of evidence has ever been brought by any engineering body to refute the evidence presented and much of the research that I conducted was done during the course of my degree and half of it was graded by my program head for the Bachelor of Technology program at Memorial University of Newfoundland (MUN). His name is Darrell Wells. Darrell Wells is a professional engineer. Darrell Wells has indicated to me that he would be a reference for me for a masters degree program. The research that forms a part of the published research papers received a cumulative 4.0 GPA. If there were things wrong with it there would have been an obligation for my instructors to inform me of errors in the research in which I was conducting. The technological assessment received an overall grade of 97%.

19. In fact every person who had an obligation to take action if what I was presenting either for myself or for DSR Karis Consulting Inc. Either did not or could not. My research have been placed in the hands of other engineers and technologists who have indicated to me that it was right.

20. Assistant Deputy Attorney General Lynn Lovett acting for David Lametti knowingly committed fraud and participated in facilitating torture contrary to 269.1 of the criminal code and other heinous crimes to facilitate the distribution of a biological weapon.

21. The actions that have allowed medical and dental agencies at a federal and provincial level is a gross negligent act. It cannot be deemed as gross oversight or an errors since it is not within the scope of any medical or dental agency to engage in any area of the mechanical engineering sciences which is practiced by both mechanical engineers and mechanical engineering technologists and professionally regulated by PEGNL. Making Newfoundland and Labrador more susceptible to biological attack is an act preparatory to levying war both in the province and federally. If I wanted to distribute a biological weapon and make it look like a random outbreak, I could issue guidelines in the manner that is present in the plethora of documents provided in the attached documentation to accomplish that. I base that assertion on the research that I pioneered and I am the expert in that area. I have worked on this research the last three years and the file numbers for the crimes are a result of reporting the research. There is a well documented history of what has happened as a result of presenting this evidence.

22. It is impossible that multiple jurisdictions in Canada and the United States are using medical and dental professionals to direct an area on mechanical engineering sciences by chance. This is statistically imposible and it is a clear demonstration of conspiracy and deliberate intent. The variation of table S-31 used by the Center for Disease Control was changed in 2003. The original documentation was found in 1994 and it is in the attached documentation. The identical mathematical formula is used except there was a removal of the section that defines the mixing factor. The mixing factor is a term that is used to define air mixing efficiency. Mixing efficiency

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is a means of representing of air mixing and it does not disappear. Regardless of whatever formula is used, an mixing efficiency still exists. The physical properties of air do not change in that manner. When removing a section of a set of instructions, mathematical justification must be given for the removal of the mixing efficency but none is given. It can be seen that the same formula is used but the information regarding the mixing factor is removed. This is poor engineering practice and it should never be used. Any person who says otherwise should never be permitted to practice any form of engineering or engineering technology. When human life is at stake it is the highest order of responsibility. Utmost care must be taken to protect life and not destroy it. This is why this issue of the engineering controls must be looked at as nothing short of deliberate intent. Changing guideline 20 years ago with no mathematical justification or any other shred of information justifying the change is beyond unreasonable. Handing a faullty set of instructions to incompetent persons and expecting them to make competent decisions on engineering sciences in the middle of a pandemic under unprecidented levels of duress is outright criminal.

23. The silence of every engineering regulatory body in Canada is further evidence of conspiracy. Every engineering body has a lawful duty to regulate the practice of engineering and should have never allowed any health authority to issue HVAC engineering guidance in any situation ever. The engineering bodies are far more responsible than any health authority as they understand Engineering controls more that any medical, dental or public health agency. Under no circumstances can any of those bodies be allowed to investigate as it has been demonstrated that they are corrupt for allowing this crime to take place that it was their lawful duty to prevent from happening.

24. It is the obligation of the health ministers to issue guidance that is within the scope of their respective fields. Using studies by doctors and other health authorities for engineering infection controls is wilful and deliberate intent. No reasonable person would consult any medical, dental or public health authority for an engineering problem, just as I would not expect anyone to come to me for any medical advice.

25. Kaysha Richardson an American Indian born in Canada was sexually assaulted repeatedly, kidnapped, trafficked, tortured and subjected to other heinous crimes to prevent this information from coming out. Kaysha is still in the United States. This gives more weight to the criminal intent of the parties involved.

26. The treatment that I have recieved in the numerous courts demonstrates the wilful and deliberate intent by persons involved in crime. From the overview of the court hearings it can be seen that there is not one shred of evidence ever presented by any person that can refute the engineering documents and the statistical analysis done on three courts in Canada outlines some very concerning issues. The correlations cannot be ignored. A 100% failure rate when no evidence to refute the engineering documents is impossble. The same narrative has

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been presented over and over. The same documents that were graded while I was attending the Marine Institute at MUN were deemed to be gibberish when presented in the courts. That is wholly impossible for me to be graded on documents and have them become illegible when placed before lawyers and judges.

27. The hierarchy of risk in an occupational health and safety setting has been deliberately compromised. No measure provincially and federally are valid and are a result of deliberate introduction of known hazards and must be investigated. Every measure introduced from the engineering controls must be investigated as does the engineering bodies responsible for regulating engineering on a provincial and federal level. The regulatory bodies for physicians and dentists must also be investigated for engaging in practising engineering and engineering technology when it is beyond the scope of their practice. This introduction of risk and the obvious conspiracy and a criminal organization as defined in the criminal code gives the basis for every death arising from the covid response to be rightly investigated as murder. This includes the vaccination program which was indroduced on the back of known criminal activity.

28. The Royal Canadian Mounted Police has been in possession of this information since July 3, 2020 when criminal negligence complaints were filed based on an earleir iteration of the research. The attached report also outlines how the introduction of a critical weakness introduced into the infrastructure of Canada and the United States is an act preparatory to levying war and it is high treason and treason.

29. Medical evidence provided by medical professionals stated that there was gain of function research. Based on what was stated by the medical professionals it is extrememly like likely that there was a biological weapon unleased in Canada and the United States. I cannot speak for the medical professionals I can only quote their work. Based on the engineering controls and they way that they were implemented it is designed to make a biological attack look like a random outbreak. SARS, and Monkeypox have been studied in BSL labs based on information provided by the CDC. A study also provided in the documentation outlines the knowledge of the CDC and the WHO had from SARS-Cov-1 and repeated the same "errors" in the SARS-Cov-2 pandemic and hid evidence of aerosol transmission and implemented practices that were known to cause the spread of SARS-Cov-1. Particle sizes of SARS-Cov-1 and SARS-Cov-2 are not vastly different that would make aersol transmission impossible. Pathogens much larger than a virus have been transmitted through aerosols. It would be an unreasonable assumption to not implement aerosol infection controls until such time as it could be definitively ruled out. Aerosol transmission is being studied in BSL labs. Aerosols is a means of weponizing pathogens. Aerosols are a means of widely distributing infectious materials and would be a primary tool for widespread distribution of a biological agent. When looking at the number of steps takein to conceal the aerosol transmission and prevent thorough public examination of the engineering controls, it makes bioterrorism

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extremely likely. No other reasonable explanation exists for the action take to conceal public examination of the AGMP infection controls.

30. The impelentation of the engineering controls are deliberate intent and it is impossible otherwise. Every person attached to the engineering bodies who signed to support engineering Canada in the attached documents are responsible and must be included in the criminal complaints and every other perosn in those organizations who concealed this information from the public.

31. The main issue with the engineering controls is that it introduces an unknown into the system that cannot be accounted for. It will create an unknown number of failures into the system. In a worst case scenario a biological agent can be introduced and made to look like a random outbreak. This is a critical weakness that cannot be ignored. The risk for loss of life is extremely high. The when I questioned the Saskatchewan Health Authority (SHA) regarding the engineering controls in the spring of 2020, the SHA could provide no analysis of risk for their guidelines either. This guideline was used federally and also affected the province of Ontario. This is not accidental it is deliberate. In fact it is impossible that this is accidental. It is like having 100 teachers in random locations in North America all grading 2+2 =5. That is impossible and if it happens it was done deliberately. The section on the analysis of risk outlines some of the issues that arose as a result of the presentation of the evidence. Related files for criminal negligence are 2023-59269 and 2023-59284 started at the Chestermere RCMP in the K-Division and 23-1588 a culpable negligence complaint made by DSR Karis North Consulting Inc. In Volusia Country by the local Sheriffs office. Both files will have information that is related to the case that started in North Battleford.

32. I have spoken to other professionals that have outlined that hazards have been introduced into other areas that fall under their expertise and I am collecting the information for the purposes of a multi-disciplinary report outlining hazards at the different stages of the Covid-19 response in Saskatchewan, and other provinces in Canada, in the United States and probably other places. With organizations such as the World Health Organization using the same negligent guidance that was issued by the CDC and changed in 2003 during the SARS outbreak. Documented research demonstrated that SARS in 2002-2003 was spread through aerosols as well. For example in Hong Kong it was found that the negative pressure from bathroom fans pulled up aerosols through drains and spread contagions and the PHAC recommends running bathroom fans continuously. There are numerous instances of things that will facilitate the spread of disease and not mitigate it.

33. Some of the other relate file numbers that are related to the case as other matters that have hindered the reporting or may have been retaliation for reporting these crimes or are in some way related to the crimes are as follows: 2022-1782862 (RCMP Battleford), 2023-70016 Sexual Assault(RCMP Turner Valley, AB), 2023-

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111338 human trafficking (RCMP Turner Valley, AB), 23-1430 Sexual Assault/human trafficking (Volusia County Sheriff, Florida), #223230811 Criminal Harassment/ Human Trafficking agency Assist (Austin Texas Police Department), Calgary Police Service File #22453817 and #22453637, RCMP file 20221414593, North Charleston Police Department #2022023800 Aggravated Domestic Assault with a Firearm, 2022023857 intimidation of a witness (I can't exactly remember what the SC criminal term was. This can be found from the department) and #23-0011116 Sexual Assault (Austin Police Department). San Antonio PD #22273597. I was recently intimidated by agents of the SHA and RCMP for making complaints against them the related file number for the initial criminal intimidation file is 2023-272452. I was further intimidated when CST. A. SMITH and CST. NEUFELD intimidated me for making the aforementioned intimidation complaint. Evidence has been submitted but I have not received the file number as yet.

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Evidence to support safe return to clinical practice by oral health professionals in Canada during the COVID-19 pandemic: A report prepared for the Office of the Chief Dental Officer of Canada.

This evidence synthesis was prepared for the Office of the Chief Dental Officer, based on a comprehensive review under contract by the following:

Paul Allison, Faculty of Dentistry, McGill University
Raphael Freitas de Souza, Faculty of Dentistry, McGill University
Lilian Aboud, Faculty of Dentistry, McGill University
Martin Morris, Library, McGill University

Every one of these people listed on this document are involved in criminal activity. This should never be done. A dentist should know better than to make determination on something that is outside the scope of his practice. This can never be done. That is a catastrophic failure in a pandemic response. This is how you kill people. This is an unacceptable risk especially when human life is involved.

July 31st, 2020

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FOREWORD

by Dr James Taylor, Chief Dental Officer of Canada

This man is part of the crime too.

Canadian oral health practitioners are returning to practice in a very different environment to the one they left prior to the onset of the COVID-19 pandemic, particularly in the domain of infection control and prevention. Oral health professional organizations, institutions, regulatory bodies and those in clinical care settings, in all Canadian jurisdictions, are making decisions each day on how to best care for patients and guide the professions in the context of the return to clinical practice during the pandemic. Further, they are having to make these decisions in a highly complex, rapidly evolving environment, based at times on incomplete scientific information.

In light of this, the Office of the Chief Dental Officer of Canada (OCDOC) commissioned McGill University to draft a comprehensive knowledge product concerning key issues that inform the provision of oral health care by relevant providers in Canada during the COVID-19 pandemic. Around this work, the OCDOC then convened a representative multidisciplinary knowledge-based group from the national oral health professional and federal government health domains. The group's role was to work collaboratively to contribute to the generation a single high-level national document on the current evidence by the team from McGill. This document will then reside in the public domain to be accessible to decision makers as they carry out their respective responsibilities.

The participants in this collaboration included:

All involved in the crimes.

NATIONAL ORGANIZATION
Public Health Agency of Canada
Health Canada – COVID-19 Task Force
Federation of Dental Hygiene Regulators of Canada,
Canadian Dental Regulatory Authorities Federation
Canadian Dental Assisting Regulatory Authorities
Canadian Alliance of Dental Technology Regulators
Canadian Dental Association
Denturist Association of Canada
Canadian Dental Assistants Association
Canadian Dental Hygienists Association
Association of Canadian Faculties of Dentistry

The OCDOC will have this document updated several times over the course of 2020-2021, in order to capture the rapidly evolving knowledge base in this area. Evidence gaps identified during this process will be identified to the Canadian Institutes of Health Research by the OCDOC, with a recommendation for priority research funding consideration in these areas.

OCDOC Mandate: to advance population-level oral health through health promotion, disease prevention and professional/technical guidance with an emphasis on vulnerable populations.

Background

Oral health professional organizational, institutional, clinical and other leaders, including frontline dental professionals treating patients, in all Canadian jurisdictions, are making decisions each day on how to best manage patients and guide the professions in the context of the return to clinical practice during the COVID-19 pandemic. These people and organizations are making decisions in a very fast-moving crisis with a changing environment and multiple, evolving sources of information. These decisions are made based on instructions and guidelines from governments and other legal entities (such as regulatory authorities), on scientific data and evidence, on expert opinion and on prioritized needs. They also include health care, economic, ethical and other important elements, while also recognizing the information and advice upon which decisions are made is often imperfect, incomplete and/or otherwise limited. In short, oral health professional decision-makers at all levels are making decisions and providing advice and guidance in a highly complex, rapidly evolving environment, based often on imperfect and incomplete information.

A second contextual observation is that across all jurisdictions in Canada, dentists, dental hygienists, dental assistants, denturists, and dental therapists, the vast majority of whom practice in private offices (versus public facilities), were advised or mandated by their regulatory bodies to cease all routine and elective care and only provide emergent/urgent care in March 2020. As of May 4th, 2020, the first Provincial/Territorial government activated a plan to "re-open" their jurisdiction, including oral health care, and other jurisdictions soon followed. However, oral health practitioners are returning to practice in a very different environment, particularly in the domain of infection control and prevention, to the one they left prior to the onset of the pandemic in Canada.

Project goal

To create a knowledge product around which the Office of the Chief Dental Officer of Canada can convene a representative knowledge-based group of the national oral health professional domain, in order to generate a single high-level national expert document which Canada's oral health regulatory authorities may then choose to consult in developing consistent guidance for their respective registrants at the Provincial/Territorial level. Further, educators, program officials and policy makers may also choose to consult this document as they carry out their respective responsibilities.

Specific objectives

1. Conduct a comprehensive review of the literature concerning key issues that inform the provision of oral health care by relevant providers in Canada during the COVID-19 pandemic. Those key areas are:
    a) Which patients are at greater risk of the consequences of COVID-19 and so consideration should be given to delaying elective in-person oral health care?
    b) What are the signs and symptoms of COVID-19 that dental professionals should screen for prior to providing in-person oral health care?
    c) What evidence exists to support patient scheduling, waiting and other non-treatment management measures for in-person oral health care?
    d) What evidence exists to support the use of various forms of personal protective equipment (PPE) while providing in-person oral health care?
    e) What evidence exists to support the decontamination and re-use of PPE?

f) What evidence exists concerning the provision of aerosol-generating procedures (AGP) as part of in-person oral health care?
g) What evidence exists to support transmission mitigation strategies during the provision of in-person oral health care?
h) What evidence exists to support space ventilation strategies that reduce the risk of transmission?
i) What evidence exists to support the disinfection of surfaces in spaces in which oral health care is provided?

2. Prepare a written report documenting the findings of the aforementioned literatures searches. The report will be prepared in a manner that provides clear and concise information to decision-makers (individuals providers or organizational) highlighting where strong to no levels of scientific evidence exist to support different approaches.

Methods used to identify and include relevant literature

A more detailed methodological description is available in Appendix J. In summary, search words and phrases were identified for each of the above topic areas a) to i), and searches were performed for English language articles, in standard scientific literature databases for the period 2000 to June 30th, 2020. Two steps were then used to include publications in this report/process: i) step 1 was a review of abstracts to decide on the relevance of publication content for the topic areas; and ii) step 2 was to include only those publications reporting the results of prospective cohort studies, randomized controlled trials, systematic reviews and/or meta-analyses. Steps 1 and 2 were done by one author and a random number of publications were reviewed in the same way by a second author so as to ensure reliability of the findings. An additional, separate search was performed of the bibliography supporting relevant national, provincial and state guidelines concerning oral health care provision during the COVID-19 pandemic in Canada and the USA. Any publications identified in this bibliography that were not in our aforementioned search, but which fulfilled the quality criteria in step 2 were also included in this report.

With respect to step 1, concerning relevant subject areas, as well as searching for COVID-19 and SARS-CoV-2, we also searched for similar respiratory tract viruses such as SARS, MERS, H1N1 and influenza. In reporting the results of our work, we have made clear whether the evidence concerns COVID-19, SARS-CoV-2, SARS, MERS, H1N1, influenza and sometimes other pathogens. In reality, much of the work reported is in the form of systematic reviews that cover a range of relevant pathogens and diseases.

With respect to step 2, concerning the inclusion of only that evidence fulfilling certain levels of quality, this was taken to enable this review to focus only on strong evidence in support of various approaches and concepts. This means that any evidence we highlight is of high quality. However, where we state that there is no evidence using our quality criteria, it does not mean there is no evidence at all, rather it means that evidence that exists is not of high enough quality to be included in our review. This is particularly important to note in the context of the current pandemic wherein there are a very high number of research publications emerging from rapidly performed research, which for good reasons, may not be of the quality ideally desired. There are also many documents

containing the opinions of experts, which are valuable in the circumstances, but which are recognized to be low in the hierarchy of quality of evidence.

Report structure

This report will address each of topics a) to i) in turn. For each topic, we will briefly justify the importance of the topic in the context of oral health care provision in the pandemic and then summarize the findings, stating how strong the evidence is. The main body of the report contains only these summaries; however, each topic has an appendix containing a tabular summary of included papers, with summary data where appropriate. Readers of this report who are interested in more detailed information will need to access the relevant papers themselves. Finally, we also make clear where evidence is related to COVID-19/SARS-CoV-2 or related to similar respiratory tract viruses such as SARS, MERS, H1N1 and influenza.

Report summary

The searches identified strong evidence for a number of conditions that increase the risk of individuals diagnosed with COVID-19 having potentially serious consequences such as hospitalization, ventilation and mortality. These conditions are hypertension, diabetes, cardiovascular and coronary artery disease, chronic respiratory diseases, kidney disease and liver disease. There is also strong evidence that people aged 65 years or older are at similar risk. The evidence concerning sex-related risk is however equivocal. Strong evidence also exists concerning the most common signs and symptoms of COVID-19, which are fever, cough, fatigue and muscle aches and shortness of breath. All these factors and others listed in the summaries below should be considered as part of the pre-treatment screening strategies used by oral health professionals.

In reviewing evidence for non-treatment management of in-person care episodes during the pandemic, there was little evidence directly related to the topic in dental care settings. However, we identified evidence regarding aerosolization in health care settings, supporting the use of N95 respirators, surgical masks and eye protection by staff and showing that influenza virus is the most commonly transmitted disease in long term care facilities so good infection control measures need to be in place to prevent transmission of this and similar viruses. We also identified research raising questions concerning infection control measures in place in dental laboratories and work identifying the need for training of professionals and compliance with infection control protocols. We also highlight the possibility of using teledentistry for certain forms of health care as an alternative to in-person care.

With respect to the use of PPE by professionals providing care, the available evidence is of limited strength but shows that N95 respirators and surgical masks are equivalent at least in the provision of non-aerosol generating procedures and that training personnel in the donning and doffing of PPE is important in reducing contamination. The discomfort of various forms of PPE, including N95 respirators, is mentioned as contributing to them being less effective than perhaps expected. We identified good evidence that N95 respirators can be disinfected with vapourized hydrogen peroxide for one re-use but no evidence to support re-use of surgical masks.

With respect to the use of aerosol-generating procedures (AGPs), the evidence was not strong. We identified one study reporting a large increase in bioaerosol in dental clinics during the work period

and a subsequent fall once that work had finished, plus other work confirming a broad range of pathogens in bioaerosols in health care settings, including dental offices. No evidence was available concerning the risk of transmission or contamination with dental AGPs.

With respect to mitigating strategies during dental procedures, the strongest evidence was identified supporting the use of chlorhexidine as a pre-procedural mouth rinse to reduce bacteria in bioaerosols prior to dental procedures. This was supported by oral chlorhexidine preventing pneumonia and other respiratory morbidity in ventilated and cardiac surgery patients. It is interesting to note that a very recently published Cochrane rapid review of international guidelines concerning AGPs and their mitigation in dental care stated: “There is a lack of evidence provided to support the majority of recommendations in the documents.”[1]

Our review of ventilation systems found that sophisticated systems used in hospitals reduce bioaerosol levels and that ventilation systems can reduce the transmission of infectious diseases, although it is not clear what specific ventilation strategies are effective in different settings. And our review of the disinfection of inanimate surfaces demonstrated that many pathogens including viruses can remain viable on such surfaces for days if disinfection strategies are not used. Our search identified chlorine-based disinfectants as effective, although it is not clear what concentrations are required for different surface types.

Finally, as a general observation, we identified several studies that highlighted the importance and the need for training in a variety of elements of infection control. Given the provision of oral health care in Canada is concentrated in thousands of small offices with small staff numbers, and given the significant changes already incorporated, plus those that will be necessary as more research emerges, oral health professions across Canada need to give careful and urgent consideration of revised and on-going infection control training for their members and trainees.

This is a massive risk. This is unacceptable. This is serious disaster potential that is left unmitigated. This is a massive national security risk to be exploited by anyone who wanted to distribute a biological weapon. Further investigation is demanded. many of these places could be distribution centres for disease. In fact many of them likely are. Every one of these places are high targets for sabotage and could very easily be sabotaged to distribute aerosolized pathogens.

Report results

a. **WHICH PATIENTS ARE AT GREATER RISK OF THE CONSEQUENCES OF COVID-19 AND SO CONSIDERATION SHOULD BE GIVEN TO DELAYING ELECTIVE IN-PERSON ORAL HEALTH CARE?**

Why is this question important?

Many forms of oral health care are elective and can reasonably be delayed if the provision of that care increases the risk of serious consequences for the patient. For instance, under normal, non-pandemic circumstances, many forms of non-urgent oral health care are delayed among patients undergoing cancer therapy, immunosuppressive therapy or treatment for mental health issues. In the pandemic, it is important for dental professionals to consider which patients of theirs are at risk for serious consequences (e.g. hospitalization, serious comorbidities and even death) should they become COVID-19 positive. Depending on the local community prevalence of COVID-19, the act of traveling to a dental office and then undergoing treatment may increase the risk of that patient becoming COVID-19 positive. It is therefore important to consider which patients are at risk of serious consequences should they be infected.

Summary of findings

Several systematic reviews have consistently provided strong evidence that hypertension, diabetes, cardiovascular and coronary artery disease, plus chronic respiratory diseases are associated with increased risk for severe COVID-19 disease, including hospitalisation, admission to intensive care, the need for ventilation and mortality[2-9]. Furthermore, two systematic reviews provided strong evidence that current smokers compared to previous and non-smokers were at greater risk of severe disease and mortality[3-7]. Two more systematic reviews provided strong evidence that people with chronic kidney disease are at increased risk of severe COVID-19[10,11], with one of these reviews noting that the SARS-CoV-2 virus can directly affect the kidneys leading to acute renal injury and mortality[10]. One of these systematic reviews also noted that people with chronic liver disease are at increased risk for severe COVID-19 and mortality due to the disease[10], while another reported weaker evidence of liver damage through COVID-19[12]. A scoping review reported some evidence that people with pre-existing cerebrovascular problems are at increased risk for severe COVID-19, including admission to intensive care[13]. Finally, in terms of systemic conditions that can affect prognosis in those diagnosed with COVID-19, another systematic review of adults and children who are immunosuppressed, through cancer therapy, transplantation or immunodeficiency, found limited evidence that they had improved outcomes compared to the general population[14].

Several systematic and scoping reviews have been performed to document information concerning the relationship between COVID-19 and pregnancy, maternal and infant health. All the studies included in the reviews involved relatively low numbers so the available evidence emerging from these reviews is limited. That said, authors observed that the majority of mothers had no complications, that vertical transmission from mother to foetus appears not to occur but remains possible, but that viral transmission from mother to child can occur during or shortly after birth[15-19]. However, all reviews stated that they were unable to draw firm conclusions given the numbers and study designs.

Among demographic factors, strong evidence was found for older age (defined as 65 years and older) to predict severe COVID-19 in two systematic reviews[5,9] but the evidence for sex was more equivocal with one systematic review concluding that males were at greater risk for severe disease[9] while another found no difference between sexes[5]. Finally, one systematic review noted that children are often asymptomatic but can transmit COVID-19[20].

A good evidence-supported document concerning the risk factors for severe COVID-19 disease can be found at: https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/guidance-documents/signs-symptoms-severity.html#toc1

For more detailed information on the evidence supporting this section, see Appendix A

b. **WHAT ARE THE SIGNS AND SYMPTOMS OF COVID-19 THAT ORAL HEALTH CARE PROFESSIONALS SHOULD SCREEN FOR PRIOR TO PROVIDING IN-PERSON CARE?**

Why is this question important?

While it is recognized that many people infected with SARS-CoV-2 are asymptomatic for varied periods of time, many do have symptoms and oral health care professionals may consider it prudent for the health and safety of patients, staff and themselves to delay care for a patient who has symptoms suggesting they may have COVID-19, who has been recently diagnosed with the disease or who lives with someone who has symptoms and or who has been diagnosed with COVID-19. Knowing the signs and symptoms associated with the disease is therefore important to enable screening of patients prior to in person oral health care.

Summary of findings

Several systematic reviews involving collectively many thousands of patients have consistently provided strong evidence reporting that the most common symptoms experienced by adults with COVID-19 are fever (approximately 80-90% of those diagnosed with the disease), cough (60-67%), fatigue and muscle aches (30-50%) and shortness of breath (21-45%)[5,7,21-24]. One other systematic review providing strong evidence[23] and a scoping review providing weaker evidence[24] also reported patients with sputum (28%) headache (8-12%), sore throat (10%) and gastrointestinal symptoms (9%), including diarrhoea (6-7%)[5,24]. Two other systematic reviews focusing on neurological signs and symptoms associated with COVID-19 noted that headache and altered sense of smell and taste were relatively common[25,26], although the prevalence ranged significantly due to the often-small size of the studies, all of which were hospital rather than community based.

In relation to symptoms of COVID-19 experienced by pregnant women and new-born babies, some of the same reviews referred to in section a) in relation to maternal and new-born health reported that pregnant mothers with COVID-19 experienced the same symptoms as other adults[15-17]. However, another systematic review of COVID-19 in children reported that a higher proportion of new-born babies with the disease were severely ill compared to children and younger adults, with most of them suffering difficulty breathing[27]. The same review, however, reported that 0-18-year-old children and adolescents tend to have mild or moderate disease only and they concluded that SARS-

CoV-2 affects this age group less than adults[27]. Interestingly, a systematic review concerning MERS-CoV reported that children were more likely to be asymptomatic[28].

A good evidence-supported document concerning signs and symptoms of COVID-19 can be found at https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/guidance-documents/signs-symptoms-severity.html

For more detailed information on the evidence supporting this section, see Appendix B

c. WHAT EVIDENCE EXISTS TO SUPPORT PATIENT SCHEDULING, WAITING AND OTHER NON-TREATMENT MANAGEMENT MEASURES FOR IN-PERSON ORAL HEALTH CARE?

Why is this question important?

While much of the focus in the provision of oral health care during the pandemic focuses on in-person health care itself, other elements of the appointment are also potentially important sources of COVID-19 transmission. Strategies to reduce the risk of transmission prior to and following the health care intervention are therefore also very important.

Summary of findings

We identified limited evidence fulfilling our quality criteria supporting any patient scheduling, patient waiting, patient follow-up and other non-treatment protocols or approaches. Most of the evidence we identified was related indirectly to the topic but is nevertheless potentially useful.

In 2010, following the H1N1 pandemic, a systematic review investigated the evidence to support the wearing of face masks in health care settings and in the community to prevent transmission of influenza viruses[29]. They concluded that there is some evidence to support the wearing of masks or respirators to prevent infection of others (i.e. to wear a mask when an individual has influenza) but less evidence to support a mask protecting an individual from being infected.

A systematic review published in 2011 investigated physical interventions in preventing respiratory virus transmission[30]. It included screening at entry ports, isolation, quarantine, social distancing, barriers, personal protection and hand hygiene, although these interventions were not focused on health care settings. They concluded that simple, low cost measures including physical barriers, isolation, hand hygiene and N95 and surgical masks are useful for reducing transmission of respiratory viruses. They stated that N95 masks appear as effective in transmission reduction as surgical masks but are more expensive, uncomfortable and irritating to skin.

Recently, a non-systematic review was published concerning evidence to support the 1-2 metre spatial distancing guidelines of multiple international, national and regional agencies[31]. They found that there is sparse evidence to support such guidelines and indeed reported 8 studies of droplets traveling more than 2 metres, with several reporting droplets traveling up to 8 metres. They reported that SARS-CoV-2 virus can be detected in the air 3 hours after aerosolization and raise questions over the dichotomization of droplet versus aerosol transmission routes.

However, another systematic review and meta-analysis investigating the optimum distance for avoiding person-to-person virus transmission and the use of face masks and eye protection to prevent transmission of viruses was recently published providing strong observational evidence supporting all these measures[32]. The review noted that there were no randomized trials testing these measures but they identified 172 observational studies and 44 non-randomized comparative studies in health care and non-health care settings. They reported an 82% reduction in transmission with one metre distancing compared to less and additional risk reduction per added meter distancing. They also reported an 85% reduction in risk with mask or respirator wearing, with respirators providing increased risk reduction compared to masks. Eye protection also provided approximately 78% reduction in risk of transmission[32].

A systematic review of the causes and contributing factors for infection transmission in long-term care facilities reviewed literature published during the period 2007-18. It concluded that the most commonly transmitted pathogen is influenza virus and that inadequate infection control procedures in those institutions, particularly hand hygiene and decontamination of surfaces, were the most frequent contributors to transmission[33].

One source of evidence directly related to dental care was a systematic review of cross-infection control in dental laboratories (i.e. the site of fabrication of prostheses and other intra-oral devices, which receive material and devices that have often been in people's mouths and so are contaminated). This paper reported that flaws in several procedures and protocols in this environment were very common. These included vaccination policies, biological safety of the work environment, use of protective equipment, organisation of cross-infection control procedures and disinfection strategies. They stated that the literature focuses on the need for improving the organization of cross-infection control procedures and training in disinfection in dental laboratory settings[34].

Finally, our search identified two systematic reviews concerning the use of "teledentistry". Clearly this is only indirectly related to the topic c) but nevertheless is a potential means to reduce disease transmission, while at the same time managing patient care. Teledentisrtry is a branch of "telehealth" that "uses communications networks for delivery of health care services and medical education from one geographical location to another"[35]. These two reviews were published prior to the pandemic and both observed that there has been limited research investigating teledentistry and the work that has been done has mainly been in specialty fields such as pediatric dentistry, orthodontics and oral medicine. However, they concluded that there is evidence to support the efficacy of teledentistry in screening for some conditions and that the approach is accepted well by dentists and patients alike[36,37]. They did, however, note that more research is required to support effectiveness for a variety of roles in different settings to aid the development of guidelines and protocols, and that cost-effectiveness studies are required to establish if teledentistry is really an effective means of providing some forms of care at less cost to all concerned.

None of these studies refer directly to the non-treatment management of patients in dental clinics but they do provide important background information to consider. Also, it is important to note that in the absence of strong evidence to support certain measures, there are clear guidelines concerning these elements of health care provision provided by Health Canada

(https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/guidance-documents/interim-guidance-outpatient-ambulatory-care-settings.html).

For more detailed information on the evidence supporting this section, see Appendix C

d. **WHAT EVIDENCE EXISTS TO SUPPORT THE USE OF VARIOUS FORMS OF PERSONAL PROTECTIVE EQUIPMENT (PPE) WHILE PROVIDING IN-PERSON ORAL HEALTH CARE?**

Why is this question important?

While the precise means of SARS-CoV-2 transmission remain unclear, the available evidence suggests strongly that aerosol, droplet and transmission via fomites (e.g. clothes, furniture or other surfaces) are possible routes. Given this, it is important to provide health care workers with the best available evidence concerning personal protective equipment (PPE) that is effective in reducing such transmission.

Summary of findings

Most of the evidence fulfilling our quality criteria in this topic area concerned influenza or other coronaviruses. Nevertheless, the evidence reported is important to consider in the current pandemic.

A recently published Cochrane review that was an update of previous versions of a systematic review concerning what types of full body PPE and donning and doffing (putting on and taking off) procedures result in the least contamination among health care workers[38]. This review reported finding low certainty evidence to support several important concepts: more body coverage results in less contamination but also less comfort and greater difficulty donning and doffing; more breathable PPE results in the same levels of contamination but more comfort for users; certain design elements of PPE that facilitate donning and doffing can reduce contamination; CDC guidance on donning and doffing, spoken instructions during doffing, one-step gown and glove removal, double-gloving and glove disinfection may reduce contamination; and face-to-face training concerning PPE use is better than written material.

A systematic review published in 2020 included a meta-analysis of 9,171 participants enrolled in randomized trials comparing N95 respirators with surgical masks in the prevention of influenza and similar viral diseases in mainly hospital but also household settings concluded that N95 respirators do not reduce the risk of contamination any more than surgical masks[39]. They made the observation that N95 respirators are designed to protect the wearer but are less comfortable to wear and this may be the reason for their not being superior to surgical masks, which are more comfortable and are designed to protect the environment, not the user. Another systematic review and meta-analysis of N95 respirators compared to medical masks, came to the same conclusion: that there is low certainty evidence that N95 respirators and medical masks offer similar protection against viral respiratory infections when used by health care workers for non-aerosol-generating procedures[40]. As referred to in discussing topic c), a systematic review of physical barriers to reduce the spread of respiratory viruses also concluded that N95 respirators were not superior to surgical masks and that the former are uncomfortable, often causing skin irritation[30]. However, the systematic review and

meta-analysis reported in section c) above, reported an 85% reduction in risk of transmission with mask or respirator wearing among health care providers, with respirators providing increased risk reduction compared to masks. This review, however, did not report a clear effect with aerosol versus non-aerosol generating procedures. They did however report that eye protection is associated with approximately 78% reduction in risk of transmission[32].

For more detailed information on the evidence supporting this section, see Appendix D

e. **WHAT EVIDENCE EXISTS TO SUPPORT THE DECONTAMINATION AND RE-USE OF PPE?**

Why is this question important?

In the global pandemic, throughout the world, including in Canada, there are shortages of and difficulties obtaining certain forms of PPE in a timely manner. Furthermore, given the massively increased demand throughout the world for such PPE, the cost of such items has increased. This has resulted in health care providers and organisations asking to what extent certain forms of PPE can be decontaminated and re-used?

Summary of the findings

We identified two recently published systematic reviews[41,42] and one scoping review[43] concerning the decontamination and re-use N95 respirators plus a systematic review investigating the same for surgical masks[44]. All were published in 2020. With respect to N95 respirators, the scoping review concluded that the evidence supporting N95 respirator decontamination is sparce but that vaporized hydrogen peroxide and ultra-violet light are the most commonly cited means in the literature[43]. One of the systematic reviews investigated decontamination of N95 respirators using ultra-violet germicidal irradiation (UVGI) using *in vitro* studies only and concluded that UVGI was able to decontaminate N95 respirators in laboratory settings without damaging them[41]. The other systematic review concluded that a single cycle of vaporized hydrogen peroxide successfully removes pathogens without creating a safety problem for the user[42]. They also observed that more than one such cycle may be feasible and effective, but that remains to be tested. Furthermore, they concluded that sodium hypochlorite, ethanol, isopropyl alcohol and ethylene oxide are not recommended for decontaminating N95 respirators[42].

The systematic review concerning the decontamination of surgical masks concluded that there is limited evidence and that they were unable to draw definitive conclusions on this subject[44].

For more detailed information on the evidence supporting this section, see Appendix E

f. **WHAT EVIDENCE EXISTS CONCERNING THE PROVISION OF AEROSOL-GENERATING PROCEDURES (AGP) AS PART OF IN-PERSON ORAL HEALTH CARE?**

Why is this an important question?

Oral health care commonly involves aerosol-generating and droplet-generating procedures due to the use of high and slow-speed handpieces (drills) and procedures such as ultrasonic scaling and tooth extraction. As stated above, there is good reason to believe that aerosol- and droplet-generating procedures are potential sources of transmission.

Exactly as one would suspect. Murky information on aerosols. Aerosols are how biological weapons can be easily distributed.

Summary of findings

We identified little evidence on this subject and the evidence we identified was weak. One scoping review of aerosol generation in health care settings including dental offices concluded that dental hand pieces do generate aerosols and that a wide range of bacteria, fungi and viruses are contained in the aerosols. However, they noted only a few studies documenting infectious disease transmission as a result of aerosol generation[45]. Also, a cohort study investigated levels of atmospheric microbial contamination before, during and after dental procedures and observed that contaminated aerosol levels increased four-fold during treatments compared to before treatments and remained elevated after work ceased, although less than during treatments[46].

We identified two other studies with indirectly related evidence that could further inform the subject of AGPs in dentistry. A systematic review investigating infection of health care workers when performing different tracheal manipulation treatments on patients with acute respiratory diseases such as SARS reported that tracheal intubation, ventilation techniques and tracheotomy all resulted in increased risk of infection for such workers[47]. Also, a scoping review to summarize research concerning SARS-CoV-2 in water provided limited evidence but observed that the virus appears unstable in water, sensitive to higher water temperatures (23-25^{0}C and above) and does not appear to be transmitted through drinking water[48].

For more detailed information on the evidence supporting this section, see Appendix F

g. **WHAT EVIDENCE EXISTS TO SUPPORT TRANSMISSION MITIGATION STRATEGIES DURING THE PROVISION OF IN-PERSON ORAL HEALTH CARE?**

Why is this an important question?

Given the essential, physical closeness of oral health care professionals to their patients and sometimes to each other during the provision of oral health care, and the necessary generation of aerosols during some procedures, it is important to investigate alternative mitigation strategies that could be employed during treatment episodes. Particular focus has been on the use of pre-treatment mouth rinses, the use of rubber dam and the use of high-volume evacuation (HVE).

Summary of findings

Several recently published systematic reviews on directly related subjects (i.e. dental care) were identified, although it is important to note that the research has focused more on bacteria or mixed microbes rather than viruses and in particular coronaviruses. We also identified several systematic reviews concerning the use of intra-oral chlorhexidine prior to other medical procedures. Clearly these are less directly relevant but nevertheless provide good supporting information.

Oral health-related research we identified focused on pre-treatment mouth rinses only. One systematic review showed that mouth rinses with chlorhexidine, essential oils, and cetylpyridinium chloride significantly reduced the number of colony-forming units. They concluded that there was moderate evidence that pre-treatment mouth rinses significantly reduce the number of micro-organisms in dental bioaerosols[49]. And a second systematic review was performed to identify interventions used in dental treatment to reduce microbial load in aerosols. They concluded that 0.2% tempered chlorhexidine was most likely to be most effective in reducing postprocedural bacterial load[50].

This completl y ig-nores contam-ination of water, legionell osis, or sabot-age.

Beyond the field of dentistry, one systematic review investigated the effect of oral antiseptic use on he risk of pneumonia in ventilated patients. They reported that oral chlorhexidine was effective in educing the risk of ventilation-related pneumonia, while the effect of povidone iodine was not lear[51]. Another systematic review of the effect of oral antiseptics on ventilation-related pneumonia n ventilated patients, also noted that they reduced the risk of pneumonia[52]. Another systematic eview investigated the effect of oral antiseptic on pneumonia and other nosocomial infections in atients undergoing cardiac surgery and reported the beneficial effect of oral chlorhexidine in educing significantly the risk of pneumonia and other nosocomial infections in this patient group[53].

inally, we note a Cochrane review protocol recently published concerning work that is highly elevant to this topic[54]. The results of this work have not yet been published, nevertheless, the rotocol describes a framework for considering infection control steps in dental clinics which is useful.

For more detailed information on the evidence supporting this section, see Appendix G

h. **WHAT EVIDENCE EXISTS TO SUPPORT SPACE VENTILATION STRATEGIES THAT REDUCE THE RISK OF TRANSMISSION?**

Why is this question important?

As previously mentioned, the potential transmission of COVID-19 by aerosols is an important question being investigated in this pandemic. Among potential approaches to address aerosol transmission is the use of ventilation strategies. This section summarizes the available evidence fulfilling our quality and subject area criteria, recognizing that this is a very broad area affecting the ventilation of all sorts of spaces that humans live and work in.

Summary of findings

We identified one systematic review and one report of a combination of literature review and expert panel interpretation of the review results. Both papers were published prior to the current pandemic. The systematic review covered the period 2003-2017 investigated the concentration and composition of bioaerosols in hospitals with different ventilation systems[55]. They reported that bioaerosol concentration levels were significantly higher in in-patient settings compared to restricted (e.g. operating rooms) and public areas. They also observed that hospital areas with natural ventilation had the highest concentration compared to areas with conventional mechanical ventilation or more sophisticated ventilation systems (including areas with increased air changes per

This doesn't make sense. If sophisticated systems had contributed to reduced risk of airborne transmission, but no ventilation requirements to achieve the reduced risk? That is absurd. This is about reducing the number of particles in the air and there are ways to do that. This is why someone competent in engineering sciences is required to determine particle removal from the air.

systems in hospitals contributes to improved air quality and reduced risk of airborne transmission of diseases[55]. The second review and expert panel group concluded that there is strong evidence for the association between building ventilation and the transmission of diseases such as influenza, SARS and others. However, there is insufficient data to specify ventilation requirements to reduce airborne spread of such diseases in hospitals, offices, homes and other sites[56].

For more detailed information on the evidence supporting this section, see Appendix H

i. **WHAT EVIDENCE EXISTS TO SUPPORT THE DISINFECTION OF SURFACES IN SPACES IN WHICH ORAL HEALTH CARE IS PROVIDED?**

Why is this question important?

While disinfection of the multiple fixed and mobile surfaces in dental offices and other dental professional settings is currently routine practice, it is important to review the available literature concerning such practices to ensure they are effective against all potential pathogens, including newly emerging ones such as SARS-CoV-2.

Summary of findings

A 2006 systematic review summarized data concerning the persistence of nosocomial pathogens on inanimate surfaces[57]. They concluded that most viruses that infect the respiratory tract, including SARS, influenza and coronaviruses can persist on surfaces for a few days and that several nosocomial pathogens including bacteria and fungi can remain viable for months if surface disinfection is not performed. Another, more recent systematic review of literature until March 2016 investigated the role of pathogens on hospital floors in human infections. They found that virtually all human pathogenic organisms could be found on floors and that aerosolization from the floor and direct contact could be responsible for transmission to humans. They concluded that effective cleaning of floors and vectors such as shoe soles is important[58].

In terms of the effectiveness of disinfection approaches for inanimate surfaces we identified a recent systematic review of the efficacy of disinfectant agents on a range of surface types in laboratory settings (i.e. *in vitro* testing) was published in 2020. The authors concluded that the effectiveness of chlorine and other forms of disinfectant varies according to the agent's concentration and the surface type being cleaned but also concluded that it is important for "field" studies (i.e. *in vivo* studies in health care settings) be performed to test the effectiveness of different agents on different surfaces[59].

Another systematic review investigated the factors that can affect the efficacy of disinfectant-impregnated wipes. The authors observed that these wipes are seeing increasing use in health care settings due to their convenience but that in such settings there are questions concerning their effectiveness. They concluded that the interaction between the disinfectant agent and the wipe material is an important factor in affecting the effectiveness of such wipes and that they should not be used in hospitals[60].

A systematic review was published in 2000 concerning of the knowledge, attitude and behaviour of oral health care workers regarding infection control procedures over the period of the 1980s and 1990s[61]. They concluded that there had been substantial improvements in compliance with some areas of infection control procedures (e.g. glove use) but not in others (e.g. needle-stick injury). While not directly relevant to the COVID-19 pandemic and indeed pertains to a range of infection control procedures beyond surface disinfection, this review raises the issues of training in new infection-control measures among dental professionals and compliance with new protocols.

Finally, it is important to note that Health Canada has lists of surface disinfectants and hand sanitizers that it states are supported by evidence and likely to be effective against SARS-CoV-2 (https://www.canada.ca/en/health-canada/services/drugs-health-products/disinfectants/covid-19.html).

For more detailed information on the evidence supporting this section, see Appendix I

ETHICAL CONSIDERATIONS OF PROVIDING ORAL HEALTH CARE DURING A PANDEMIC

It is clear through this report that while some elements of the topics discussed have strong evidence to support certain approaches, other topics only have only weak evidence, or the evidence is not directly relevant and a degree of interpretation to oral health care in the COVID-19 pandemic is necessary. And in some areas, there is no evidence at the level of quality that we could identify. Again, this does not mean there is no evidence at all, but it means that evidence that may be identified using other quality criteria may have significant biases, thereby reducing the confidence we have in that evidence. Given these observations but also given the need for health care professionals, including oral health care professionals and their professional organizations, to make decisions concerning patient care and guidelines for patient care, it is important to consider appropriate ethical principles. A reminder of such principles and how they should be used by public health professionals in the pandemic are provided on the Health Canada website (https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/canadas-reponse/ethics-framework-guide-use-response-covid-19-pandemic.html).

Glossary of abbreviations

Abbreviation	*Explanation*
AGP	Aerosol-generating procedures
CDC	Centers for Disease Control and Prevention
CFU	Colony-Forming Unit
CHX	Chlorhexidine
COVID-19	Coronavirus disease 2019
HVE	High-Volume Evacuation
H1N1	Influenza A
ICU	Intensive Care Unit
IgM	Immunoglobulin M
MERS	Middle East Respiratory Syndrome
PPE	Personal Protective Equipment
RCT	Randomized Controlled Trials
SARS	Severe Acute Respiratory Syndrome
SARS-CoV-2	Severe Acute Respiratory Syndrome Coronavirus-2
SR	Systematic Review
TMD	Temporomandibular disorders
UVGI	Ultra-violet Germicidal Irradiation

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APPENDIX A: Key findings for topic a) patients at greater risk of the consequences of COVID-19.

Condition	Main findings	Source*
Strong evidence		
Cardiovascular disease	Higher chance of: (i) severe COVID-19 (odds: 3.1x greater) (ii) COVID-19 mortality (odds: 11.0x greater)	SR: *Aggarwal et al. (1)*
	Higher chance of severe COVID-19 (odds: 3.4x greater)	SR: *Yang et al. (7)*
	Higher chance of severe COVID-19 (odds: 5.2x greater)	SR: *Zheng et al. (8)*
Hypertension	Higher risk for: (i) COVID-19-related cardiac injury (linked to higher mortality – risk: 3.9x)	SR: *Li et al. (3)*
	Higher risk for: (i) severe COVID-19 (risk: 2.0x) (ii) COVID-19 mortality (risk: 2.2x) (iii) need for ICU (risk: 2.1x)	SR: *Pranata et al. (5)*
	Combined with diabetes: 2.6x odds for severe COVID-19	SR: *Liu et al. (4)*
	Higher chance of severe COVID-19 (odds: 2.3x greater)	SR: *Yang et al. (7)*
	Higher chance of death (odds: 2.5x greater)	SR: *Tian et al. (6)*
	Higher chance of severe COVID-19 (odds: 2.7x greater)	SR: *Zheng et al. (8)*
Coronary heart disease	Higher chance of death (odds: 3.8x greater)	SR: *Tian et al. (6)*
Chronic obstructive pulmonary disease	Higher risk for: (i) severe COVID-19 (risk: 1.9x) (ii) COVID-19 mortality (60% more)	SR: *Alqahtani et al. (2)*
Chronic pulmonary disease	Combined with hypertension: 4.2x odds for severe COVID-19	SR: *Liu et al. (4)*
Respiratory disease, general	Higher chance of severe COVID-19 (odds: 3.5x greater)	SR: Y*ang et al. (7)*

	Higher chance of severe COVID-19 (odds: 5.1x greater)	SR: *Zheng et al. (8)*
Smoking, current	1.45x more severe complications, mortality rate of mortality rate of 38.5%.	SR: *Alqahtani et al. (2)*
	Higher chance of severe COVID-19 (odds: 2.51x greater)	SR: *Zheng et al. (8)*
Diabetes mellitus	Higher chance of death (odds: 2.0x greater)	SR: *Tian et al. (19)*
	Higher chance of severe COVID-19 (odds: 3.7x greater)	SR: *Zheng et al. (8)*
Chronic kidney diseases	Higher COVID-19 severity (84% of 56 cases) and mortality (53% of 15 cases)	SR: *Oyelade et al. (9)*
Acute kidney injury	Observed in 7.58% of COVID-19 patients (mortality rate: 93.27%)	SR: *Chan et al. (10)*
Liver diseases	Higher COVID-19 severity (57% of 75 cases) and mortality (18% of 34 cases)	SR: *Oyelade et al. (9)*
Limited evidence		
Pregnancy: Women's and perinatal/neonatal health	(i) Miscarriage: 04/324 cases (1.2%); (ii) transmission to neonate: 03/155 cases (1.9%)	SR: *Juan et al. (14)*
	No maternal death or transmission to neonate (89 cases)	SR: *Muhidin et al. (15)*
	No maternal death and 03 admissions to ICU; Neonatal and intrauterine deaths: 01 each (108 cases)	SR: *Zaigham & Andersson (16)*
	Women: no serious symptoms and unlike transmission to child (inconclusive findings)	Scoping Review: *Caparros-Gonzalez (17)*
	Transmission to 179 neonates (mothers infected close to childbirth): 5 PCR-positive, 3 with SARS-CoV-2 IgM, 8 suspected	Cohort Study: *Egloff et al. (18)*
Liver diseases	Possible hepatic anomalies caused by COVID-19 (blood biomarkers and histopathology)	SR: *Kukla et al. (11)*
Nervous system	Incidence of secondary neurologic complications ranging from 6% to 36.4%	Scoping Review: *Herman et al. (12)*

Immunosuppressed patients	Immunosuppression does not seem to increase the risk for severe COVID-19	SR: *Minotti et al. (13)*
Children	Probably lower viral levels and symptoms than adults; unlikely cause for an outbreak	SR: *Ludvigsson, J. F.(19)*

*SR: Systematic review

APPENDIX B – Key findings for topic b) clinical signs and symptoms of COVID-19

Sign/symptom	Frequency	Source
Strong evidence		
Fever	79 to 91%	SR: *Rodriguez-Morales et al.* (22); *Fu et al.* (19); *Hu et al.* (20); *Liu et al.* (4); *Yang et al.* (7); Scoping review: *Borges do Nascimento et a*l., (21)
Cough	58 to 68%	SR: *Rodriguez-Morales et al.* (22); *Fu et al.* (19); *Hu et al.* (20); *Liu et al.* (4); *Yang et al.* (7); Scoping review: *Borges do Nascimento et a*l., (21)
Dyspnea/shortness of breath	21 to 46%	SR: *Rodriguez-Morales et al.* (22); *Fu et al.* (19); *Hu et al.* (20); *Liu et al.* (4); *Yang et al.* (7); Scoping review: *Borges do Nascimento et a*l., (21)
Myalgia or fatigue	29 to 51%	SR: *Rodriguez-Morales et al.* (22); *Fu et al.* (19); *Hu et al.* (20); *Liu et al.* (4); *Yang et al.* (7); Scoping review: *Borges do Nascimento et a*l., (21)
Sputum	28%	SR: *Rodriguez-Morales et al.* (22)
Sore throat	10 to 11%	SR: *Rodriguez-Morales et al. (*22); Scoping review: *Borges do Nascimento et al.*, (21)
Headache	8 to 12%	SR: *Rodriguez-Morales et al. (*22); Scoping review: *Borges do Nascimento et al.*, (21)
Gastrointestinal symptoms	9%	Scoping review: *Borges do Nascimento et al.*, (21)
Diarrhoea	6 to 7%	SR: *Rodriguez-Morales et al.* (22); *Liu et al.* (4)
Limited evidence		
Anosmia	Common	SR: *Whittaker, A et al.,(24)*; *Liu et al.* (4)
General neurological sequelae	Unclear frequency and severity	SR: *Leonardi, M, et al*., (23)
Others: seizures, stroke, Guillain-Barré syndrome	Possible (uncommon)	SR: *Whittaker, A et al.,(24)*; *Liu et al.* (4)

Pregnant women		
Fever	68%; main symptom	SR: *Zaigham & Andersson, (15)*; *Muhidin et al. (14)*
Cough	34%; main symptom	SR: *Zaigham & Andersson, (15)* ; *Muhidin et al. (14)*
Dyspnea	Common	SR: *Juan J, et al. (13)*
Myalgia or fatigue	Common	SR: *Juan J, et al. (13)*
Severe pneumonia	0 to 14%	SR: *Juan J, et al. (13)*

*SR: Systematic Review

APPENDIX C: Key findings for topic c) non disease-specific approaches to assist with non-treatment patient management measures for in-person oral health care.

Approach	Main findings	Source*
Limited evidence		
Physical distancing - Protective effect	Lower odds for transmission; 82% lower odds with distancing of ≥1m (absolute risk: 13%, vs 3% if <1m). Significantly additional transmission risk reduction for each additional 1m distancing Physical distancing supported by cohort studies	SR and meta-analysis: *Chu et al (32)* SR: *Jefferson et al. (30*)
Coughing, particle spread	Horizontal spread is size-dependent, range (size): 2m (30 µm) to 3m (<10 µm) in experimental studies and mathematical modelling	SR: *Bahl et al.* (31)
Frequent handwashing	Odds nearly ½ lower for SARS, and 80% less for common colds	SR: *Jefferson et al. (30*)
Rubbing antiseptics	Benzalkonium chloride: lower risk for airways infection in kids; Impregnated handkerchiefs may prevent infection	SR: *Jefferson et al. (30*)
Wearing gloves	Odds nearly ½ lower for SARS – maximum effect combined with handwashing, mask and gown (odds: 90% lower) Adversities: 73% of cases (e.g., skin rash and itching)	SR: *Jefferson et al. (30*)
Masks or respirators worn by diseased individuals	May prevent the transmission of influenza to others (including surgical masks, P2 and N95 respirators). Odds may be 67% lower with surgical masks than with none N95 respirators, adversities: 36% of cases (e.g., skin rash and itching)	SR: *Cowling et al. (29); Jefferson et al. (30*)
Masks or respirators worn by healthy individuals	Little evidence supporting a protective effect. Risk is 44% with N95 respirators, surgical masks or reusable 12-16-layer cotton masks. Single-layer masks are less protective.	SR: *Cowling et al. (29)* SR and meta-analysis: *Chu et al (32)*

	Pros: acceptable, feasible and reassuring; cons: discomfort, and potential equity issues (use of resources).	
Face shields/eye protection	67% lower odds for infection	SR and meta-analysis: *Chu et al (32)*
Specific settings, general precautions		
Long-term care settings	Poor infection control (mainly poor hand hygiene and surface disinfection): higher risk to influenza; Disinfection of living quarters reduced odds of SARS by 70%	SR: *Lee et a (32)*; *Jefferson et al. (30*)
Dental laboratories	Frequent non-ideal infection control, i.e.: (i) roughly half of labs are unaware on whether dentists disinfect impressions; (ii) some labs still do not disinfect all impressions received; (iii) non-use of gloves and lack of a standard vaccination policy; (iv) potential barrier: infection control as an additional financial burden	SR: *Vázquez-Rodríguez, et al (34).*
Teledentistry		
Potential use	(i) Pre-implant evaluation, oral cancer surveillance and TMD (ii) Reducing costs of care (iii) Real-time appointments and remote data access (iv) Capacity building (supportive environment/learning), specially for younger or remote clinicians	SR: *Estai et al. (36).* SR: *Irving et al. (37)*
Advantages	(i) Better access to oral healthcare, especially for remote and rural areas, nursing homes (ii) Easier public access to oral health information (iii) Avoidance of inappropriate referrals	SR: *Estai et al. (36); Irving et al. (37)*
Limitations	(i) Human resources: need for dedicated personnel, remuneration of care providers (ii) Challenges with policies/regulations, safety of electronic records	SR: *Irving et al. (37)*

*SR: systematic review.

APPENDIX D: Key findings for topic d) PPE for providing in-person healthcare.

Approach	Main findings	Source*
Limited evidence for COVID-19 (including strong evidence for other diseases)		
Full body PPE	Powered respirator and coverall vs N95: (i) 73% less contamination risk; (ii) 7.5x higher risk for non-compliance (harder to don and doff).	SR: *Verbeek et al (38)*
Gowns	Better protection than aprons. Water-repellent vs breathable material: more protection but less satisfaction). Modifications on gowns seem to reduce contamination risk (i.e., sealed gowns, better fit on neck, wrists and hands, better cover of gown-wrist interface, tabs for easier doffing of masks. Instructions for correct doffing – less contamination.	SR: *Verbeek et al (38)*
Wearing gloves	Double gloving: possibly less viral contamination. Hand-rub before doffing: less contamination with quaternary ammonium or bleach, not with alcohol. Instructions for correct doffing – less contamination.	SR: *Verbeek et al (38)*
Face shields and eye protection	Nurses were at lower odds of influenza if wearing a face shield correctly. Eye protection: 78% lower odds for infection.	SR: *Cowling et al. (29)* SR and meta-analysis: *Chu et al (32)*
N95 vs surgical masks	70% (RR: 0.30) less risk of transmission in healthcare settings, regardless of type (N95 respirators, surgical masks or reusable 12-16-layer cotton masks). Some evidence N95 respirators may have greater protective effect than masks in health care settings. Not clear with aerosols. Drawback: less clear communication and perceived less empathy (professional → care receiver). Similar odds for viral respiratory infections (including influenza) and absenteeism rates (nurses, around 20%). N95 more uncomfortable and irritating to skin.	SR and meta-analysis: *Chu et al (32)* SR: *Bartoszko et al (40); Jefferson et al. (30)*

	No difference for viral infections, but N95 has less colonization than surgical masks (risk: 42% less). N95 recommended for high-risk medical staff.	SR: *Youlin Long, et al., (39)*

*SR – systematic review

APPENDIX E: Key findings for topic e) decontamination and re-use of PPE.

Approach	Main findings	Source*
Limited evidence		
N95 respirators		
Vaporized hydrogen peroxide	Single cycle: virucidal, some anti-bacterial efficacy, no change in physical properties (airflow resistance, aerosol penetration). More than one cycle: unclear effect.	SR: *O'Hearn et al. (42); Scoping review: Onofre et al.(43)*
Other chemicals	Ethylene oxide: virucidal, no change in physical properties. Bleach, ethanol and isopropanol solutions: not recommended due to physical damage. All tested with single cycle.	SR: *O'Hearn et al. (42)*
Ultraviolet light	Viral load reduction per cumulative dose: (i) 20 kJ/m^2: 99%; (ii) 40 kJ/m^2: 99.9%. Studies tested up to 3 cycles of irradiation. No changes on fit or particle passing rate up to 3 cycles.	SR: *O'Hearn et al. (41)*
	Need for standardization for different materials. Promising combination with other agents (e.g. with peracetic acid, hydrogen peroxide and dry heat).	Scoping review: *Onofre et al.(43)*
Surgical masks		
Decontamination after use	Minimal change in filtration with dry heat, mild with 70% ethanol; damage may be worse with 70% isopropanol; autoclave and 0.5% bleach led to major damage. No data on antiviral/antimicrobial effects	SR: *Zorko et al. (44)*
Treatment before use	Several pre-use experimental coating protocols: mild effect on mask efficacy and adverseness. Unclear effect	SR: *Zorko et al. (44)*

*SR: systematic review.

APPENDIX F: Key findings for topic f) the provision of aerosol-generating procedures (AGP)

Condition	Main findings	Source*
Limited evidence in relation to COVID-19/SARS-CoV-2		
Water Contamination	Detection of SARS-CoV: (i) In hospital wastewater, domestic sewage, and tap water at 20C persisted for 2 days; In hospital wastewater, domestic sewage, and tap water at 4C, persisted for 14 days (n=4) (ii) SARS-CoV RNA in water environments (approx 63% of samples) (iii) Concentration of SARS-CoV from water: ● Sewage from housing (0 - 1%); ● Sewage from hospital (21.4%)	Scoping Review: *La Rosa et al.* (48)
Limited evidence for SARS, MERS, H1N1, Influenza		
Bio-aerosol transmission/ contamination	Contamination of SARS to Health care workers: ***Key medical interventions:*** (i) Performing Tracheal intubation (5.6x more chance of contamination) (ii) Performing chest compression (4x more chance of contamination) (iii) Performing tracheotomy (3.2x more chance of contamination) (iv) Performing Defibrillation (2.5x more chance of contamination) (v) Performing non-invasive ventilation (2x more chance of contamination) (vi) Performing Manual ventilation (1.8x more chance of contamination) Bacterial contamination: ***Mobile Dental Unit:*** (i) Before treatment (6.5 Units*) (ii) During dental treatment (26.0 Units) (iii) After dental treatment (9.0 Units)	SR: *Tran et al. (47)* Scoping Review: *Zemouri et al. (45)* Cohort Study: *Shivakumar et al. (46)*

*Units for CFU: colony-forming unit (count of viable bacteria); SR: Systematic review.

APPENDIX G: Key findings for topic g) mitigation strategies (e.g. rubber dam, mouth rinses etc.) during the provision of in-person oral health care.

Intervention	Main findings*	Source*
Limited evidence		
Oral Rinse Chlorhexidine (CHX)	***In Dental Procedures:*** Before ultrasonic scaling, tempered CHX 0.2% presented the highest probabilities of being ranked the most effective treatment (31.2% bio-aerosol reduction). Before different types of dental treatments, CHX presented a reduction of 78.9% Units. ***In Medical Procedures:*** Before mechanically ventilated patients to reduce risk of pneumonia (28% bio-aerosol reduction). (i) Before elective cardiac surgery to reduce risk of pneumonia (48% bio-aerosol reduction). (ii) Before elective cardiac surgery to reduce risk of nosocomial infections (35% bio-aerosol reduction). Before undergoing ventilation to prevent pneumonia (29% bio-aerosol reduction).	SR: *Koletsi et al.(50)* SR: *Marui et al.(49)* SR: *Labeau et al.(51)* SR: *Spreadborough et al. (53)* SR:*Li et al. (52)*
Herbal rinse	**In dental procedures** Before different types of dental treatments, presented a reduction of 35.9% Units.	SR: *Marui et al.(49)*
Cetil Pyridinium Chloride	**In dental procedures** Before different types of dental treatments, presented a reduction of 61.2% Units.	SR: *Marui et al.(49)*
Essential Oils	**In dental procedures** Before different types of dental treatments, presented a reduction of 43.5% Units.	SR: *Marui et al.(49)*

Povidine-Iodine	***In Medical Procedures:*** Before mechanically ventilated patients to reduce risk of pneumonia (61% bio-aerosol reduction). Before undergoing ventilation to prevent pneumonia (61% bio-aerosol reduction).	SR: *Labeau et al.(51)* SR: *Li et al. (52)*

*Units for CFU: colony-forming unit (count of viable bacteria); SR: Systematic review.

APPENDIX H: Key findings for topic h) space ventilation strategies to reduce the risk of transmission

Ventilation setting	Main findings	Source*
Limited evidence in relation to SARS, MERS, H1N1, Influenza		
Ventilation of various buildings	Confirmed SARS cases in: (i) Hospitals ventilation:138 cases (ii) High-rise housing state: 4\19 blocks	SR: *Li et al. (56)*
Hospital ventilation systems	Bio-aerosol concentrations in the different areas of the hospitals: ***Bacterial units*** (i) With natural ventilation: 201 Units vs areas using mechanical ventilation: 20 Units (ii) In inpatient facilities: 77 Units (iii) In public areas: 14 Units (iv) In restrict areas: 13 Units (v) With enhanced mechanical ventilation systems: 9 Units	SR: *Stockwell et al. (55)*

*Units for CFU: colony-forming unit (count of viable bacteria); SR: Systematic review.

APPENDIX I: Key findings for topic i) disinfection of surfaces in spaces in which oral health care is provided

Setting/Intervention	Main findings	Source*
Limited evidence in relation to SARS, MERS, H1N1, Influenza		
Nosocomial pathogens on inanimate surface	***In a hospital environment:*** Persistence of different virus: (i) Adenovirus: 7 days to 3 months (ii) SARS: 72-96 hours (iii) Influenza virus: 1 -2 days (iv) Coronavirus: 3 hours	SR: *Kramer et al. (57)*
Limited evidence		
Disinfectants	**Chlorine** Viral disinfection on different surfaces: (i) Ceramic : 42% reduction of microorganisms (ii) Plastics: 26% reduction of microorganisms (iii) Stainless Steel: 18.2% reduction of microorganisms (iv) Fabric: 9.2%reduction of microorganisms (v)Glass: 3.65% reduction of microorganisms (vi) Wood: 2.8% reduction of microorganisms	SR: *Gallandat et al. (59)*
	Alcohols Viral disinfection of different surfaces: (i) Glass:14.6%reduction of microorganisms (ii) Plastics:9.35%reduction of microorganisms (iii) Stainless Steel: 8.1%reduction of microorganisms (iv) Fabric:7.4%reduction of microorganisms	SR: *Gallandat et al. (59)*
	Hydrogen Peroxide Viral disinfection of different surfaces: (i) Stainless Steel:3.7% reduction of microorganisms (ii) Glass: 2.4%reduction of microorganisms	SR: *Gallandat et al. (59)*

	Peracetic Acid Viral disinfection of different surfaces: (i) Stainless Steel: 2.6% reduction of microorganisms (ii) Plastics:1.47%reduction of microorganisms	SR: *Gallandat et al. (59)*
	Chlorhexidine Viral disinfection of different surfaces: (i) Plastics: 1.97% reduction of microorganisms (ii) Stainless Steel:0.5% reduction of microorganisms	SR: *Gallandat et al. (59)*
Floor surface and environmental ground	Bacteria, fungi and viruses could be presented on floor surfaces through direct and indirect routes of transmission: (i) Avian Influenza virus: detected 6m downwind from the barn. (ii)Rhinovirus: Higher infection rate in Hospital simulation room - unclear (56% vs 36% cleaned titles). Interventions such as efficient cleaning of floor surfaces and vectors that transfer infectious organisms to floors such as shoe soles could be an effective infection control strategy to prevent human disease.	SR: *Rashid et al. (58)*
Disinfection Wipes	*Microfiber wipes:* ● Superior microbial removal ● Superior efficiency vs cotton string mops *Disinfectant-impregnated wipes:* (i) Alcohol: ● Rapid bactericidal effect (not sporicidal) ● Poor inactivation effectiveness for some virus (ii) Chlorine and Chlorine Compounds: ● Large bactericidal spectrum (iii) Peroxygens: ● Germicidal activity (including bacterial spores) (iv) Quaternary Amonium Compounds: ● Broad spectra of biocidal activity (lipid, enveloped viruses, like COVID-19. ● Less effective with gram negative bacteria and non-enveloped viruses	SR: *Song et al. (60)*

* SR: Systematic review.

APPENDIX J: Methods used to identify and include relevant literature

This report was structured as a rapid review of the evidence to support safe provision of oral health care during the COVID-19 pandemic. Different search strategies were tailored for nine key areas ("a" to "i"); available evidence was divided according to those key areas.

J.1. Eligibility criteria

J.1.1. Study types and design

Besides studies in the field of COVID-19/SARS-CoV-2, we also included studies on closely related respiratory viruses, comprising SARS, MERS, H1N1, influenza and common cold. Eligible designs were: systematic reviews (SR), scoping reviews, randomized controlled trials (RCT) and prospective cohort studies. We considered only manuscripts written in English as potential sources of study data.

The paucity of literature on SARS-CoV-2 infection control has led us to extend inclusion criteria for key areas "f", "g", "h" and "i". Therefore, studies related to airborne bacterial contamination were also included for those areas.

J.1.2. Types of conditions and interventions

Each key review area approached a distinct set of conditions and/or interventions of relevance for oral health care. In brief, those were conditions leading to higher risk of morbidity or mortality by COVID-19, approaches to protect healthcare professionals and patients from infection in different moments (i.e. physical distancing, aerosol-generating procedures, asepsis/disinfection and PPE). We expect conditions and interventions of relevance for the viruses mentioned above to be potentially relevant for COVID-19/SARS-CoV-2, even if as with poorer generalizability – studies reporting them would be considered as weaker sources of evidence.

Specific conditions and interventions were:

a. Comorbidities and other health conditions able to increase the risk of COVID-19-related complications, including death;
b. Clinical signs and symptoms expected with COVID-19 and observable by dental professionals before rendering in-person care;
c. Non-treatment approaches to provide in-person dental care, including patient scheduling, waiting and others (e.g., teledentistry-based interventions);
d. Different PPE for in-person dental care, based on studies from different areas of health (not restricted to dental professions);
e. Decontamination of PPE, aiming at their possible reuse;
f. Aerosols generated by dental procedures, and their relevance for the transmission of COVID-19;
g. Methods to mitigate cross-infection by aerosols during in-person provision of oral health care, including rubber dam and pre-operatory mouthwashes;
h. Spatial ventilation strategies to reduce the risk of transmission;
i. Disinfection of surfaces where oral health care is provided.

Since, at the time of preparing this review, there is no available vaccine for COVID-19, we have not considered that kind of intervention. We did not include prophylactic antiviral regimens for the same reason, for either patients or health care professionals. Since there is potential for vaccines and antivirals to become parts of dental professionals' routine after their development, we may consider including them in future updates.

J.1.2. Outcomes

This review considered any outcome related to the severity of COVID-19 as relevant, including signs/symptoms, complications and incident comorbidities, disease-specific severity indexes, and survival/death. Whenever relevant, measures of contamination (e.g., % contaminated per group, or microbial counts on disinfected surfaces) and adverse effects (e.g., rash caused by prolonged mask wearing) were considered.

Whenever relevant for each study key area, a brief description of patient and professional perception was provided. This would be done quantitatively (by numbers, e.g., % of dentists who disinfect impressions before sending to the laboratory) or qualitatively (by a concise narrative of key perceptions).

J.2. Search strategy

J.2.1. Electronic searches

We performed systematic literature searches separated by key areas in the following databases: CINAHL, Embase (Ovid), MEDLINE (Ovid) and SCOPUS, restricting our search to a period of 20 years (January 2000 to June 2020). Different search strategies were prepared for key areas "a" to "i" and adapted for each database. Given their similar nature, some pairs of key areas employed a single search (i.e, "a"+"b", "d"+"e", and "f"+"g"), totalling six searches.

Please refer to Table J1 at the end of this Appendix for the terms used in the electronic searches.

J.2.2. Researching other resources

We reviewed the list of references of all papers included in the report to identify other potentially relevant studies ("reference mining").

J.3. Data collection and analysis

J.3.1. Selection of studies

Two researchers (L.A. and R.S.) examined the titles and abstracts from each search to decide on their exclusion. A third researcher (P.A.) tackled any disagreement between the two reviewers during the selection of titles and abstracts.

Potential inclusion (including cases of insufficient information for exclusion) led to the revision of full text versions by two researchers (R.S. and P.A.). For full text selection, any disagreement was decided by a consensus meeting with a third researcher (L.A.). Although we always reached consensus, the third researcher would have the final decision in cases of persisting disagreement.

In the case of having two or more manuscripts describing the same study, those references would count as a single included study.

J.3.2 Data extraction/management, and quality of studies

Studies were classified according to the level of evidence provided: SR>RCT>prospective cohort. Scoping reviews were considered due to the breadth of information rather than strength of evidence. Since this is a rapid review on a vast amount of key areas, no in-depth quality assessment was performed – instead, we classified sources of evidence as "strong", "limited" or "none" for each specific condition/intervention.

J.2. Description of studies

J.2.1. Results of the search

The search strategy retrieved 7,877 study titles and abstracts. After examining those references, 7,795 clearly did not meet the inclusion criteria and were excluded. Eighty-two full text reports of potentially relevant studies were obtained for further evaluation. After excluding 23 full reports, our sample totalled 60 study reports.

According to each section, articles were included. Appendix Table J2 shows the selection of the publication for inclusion in the systematic review.

Appendix Table J2. Yield of the six electronic search strategies, in terms of the number of reports.

Key areas	Total*	Excluded	Included**
A + B	778	751	27 *(3.5%)*
C	3,174	3.165	8 *(0.3%)*
D + E	751	744	7 *(0.9%)*
F + G	762	752	10 *(1.3%)*
H	453	451	2 *(0.4%)*
I	1,959	1.954	5 *(0.3%)*

* No duplicate found within any of the six searches; **Count followed by percent from total.

J.2.2. Included Studies

Most included studies were published in the last 10 years. Whereas only 5 (8%) reports were published between 2000 and 2010, numbers rise to 15 (26%) between 2011 and 2019, and further to 39 (66%) from January to June 2020. Regarding study design, the majority of our inclusions were SR (n=50, 85%). We have also included seven scoping reviews (12%), as well as two primary studies not listed as references in included SRs: one RCT (1.5%) and one prospective cohort study (1.5%).

J.2.3. Measures of treatment effect and Unit of analysis issues

Included studies underwent qualitative analysis and separate data extraction, without further efforts for quantitative synthesis. Please refer to the main document and Appendices A to I for the description and results of included studies.

Appendix Table J1. Search strategies used for each key area of the present report.

Key areas A and B
1. exp Severe Acute Respiratory Syndrome/ 2. "severe acute respiratory syndrome coronavirus 2".mp. 3. (2019 ncov or 2019nCoV or "covid 19" or "sars cov 2" or covid-19).mp. 4. coronavirus/ or exp betacoronavirus/ 5. or/1-4 6. exp Risk Factors/ 7. exp Risk Assessment/ 8. (risk? adj3 (at or assess* or factor?)).tw,kf. 9. (complication? or mortality or sequela? or comorbid* or consequence?).tw,kf. 10. or/6-9 11. 5 and 10 12. meta-analysis.pt. 13. meta-analysis/ or systematic review/ or meta-analysis as topic/ or "meta analysis (topic)"/ or "systematic review (topic)"/ or exp technology assessment, biomedical/ 14. ((systematic* adj3 (review* or overview*)) or (methodologic* adj3 (review* or overview*))).ti,ab,kw. 15. ((quantitative adj3 (review* or overview* or synthes*)) or (research adj3 (integrati* or overview*))).ti,ab,kw. 16. ((integrative adj3 (review* or overview*)) or (collaborative adj3 (review* or overview*)) or (pool* adj3 analy*)).ti,ab,kf,kw. 17. (data synthes* or data extraction* or data abstraction*).ti,ab,kf,kw. 18. (handsearch* or hand search*).ti,ab,kf,kw. 19. (mantel haenszel or peto or der simonian or dersimonian or fixed effect* or latin square*).ti,ab,kf,kw. 20. (met analy* or metanaly* or technology assessment* or HTA or HTAs or technology overview* or technology appraisal*).ti,ab,kf,kw. 21. (meta regression* or metaregression*).ti,ab,kf,kw. 22. (meta-analy* or metaanaly* or systematic review* or biomedical technology assessment* or bio-medical technology assessment*).mp,hw. 23. (medline or cochrane or pubmed or medlars or embase or cinahl).ti,ab,hw. 24. (cochrane or (health adj2 technology assessment) or evidence report).jw. 25. (comparative adj3 (efficacy or effectiveness)).ti,ab,kf,kw. 26. (outcomes research or relative effectiveness).ti,ab,kf,kw. 27. ((indirect or indirect treatment or mixed-treatment) adj comparison*).ti,ab,kf,kw. 28. or/12-27 29. Epidemiologic Studies/ or exp Case Control Studies/ or exp Cohort Studies/ 30. (case control or (cohort adj (study or studies)) or cohort analy$ or (follow up adj (study or studies)) or longitudinal or retrospective or cross sectional).tw. 31. Cross-Sectional Studies/ 32. or/29-31 33. 28 or 32 34. 11 and 33 35. limit 62 to last 25 years
Key area C
1. exp Stomatognathic Diseases/ 2. exp Dentistry/ 3. exp Oral Health/ 4. exp Dental Facilities/ 5. (dentist* or endodont* or orthodo

nti* or periodont* or prosthodont* or apicoectom* or gingivectom* or gingivoplast* or glossectom* or "mandibular advancement" or alveolectom* or alveoloplast* or vestibuloplast* or "root canal" or oral or oropharyng* or temporomandibular or TMJ or jaw or jaws or mandibular or maxillofacial or mandible* or maxilla* or "alveolar ridge" or dental or orthognathic or tooth or teeth or occlusion or malocclusion or mal-occlusion or odontolog* or tongue* or glossal or buccal or palatal or palate or palates or labial or lip or lips or gingiva* or gingiviti*).tw,kw.
6. or/1-5
7. exp Viruses/
8. exp Virus Diseases/
9. (viridae or COVID-19 or AIDS or HIV or ebola or zika or "west nile" or shingles or SARS or MERS or chickenpox or smallpox or Chikungunya or epstein-barr or erythema or exanthum or influenza? or flu or HFMD or "heartland virus" or HFRS or hepatitis or herpes or cmeasles or mumps or "nipah virus" or Poliomyelitis or yersiniosis or rubella or salmonellosis or rabies).tw,kw.
10. 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lolavirus* or luchacovirus* or luteovirus* or luz24virus* or luz7virus* or lymphocryptovirus* or lymphocystivirus* or lyssavirus* or m12virus* or macanavirus* or macavirus* or machinavirus* or machlomovirus* or macluravirus* or macronovirus* or maculavirus* or mamastrovirus* or mammarenavirus* or mandarivirus* or marafivirus* or marburgvirus* or mardivirus* or marnavirus* or marseillevirus* or marthavirus* or marvinvirus* or mastadenovirus* or mastrevirus* or mavirus* or megabirnavirus* or megalocytivirus* or megrivirus* or menolivirus* or merbecovirus* or metapneumovirus* or metavirus* or milecovirus* or mimivirus* or mimoreovirus* or minacovirus* or minunacovirus* or mischivirus* or mitartevirus* or mitovirus* or mivirus* or mobatvirus* or mobuvirus* or molluscipoxvirus* or mooglevirus* or moonvirus* or moordecovirus* or morbillivirus* or mosavirus* or msw3virus* or muarterivirus* or mudcatvirus* or mupapillomavirus* or muromegalovirus* or muscavirus* or muvirus* or mycoflexivirus* 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or polerovirus* or polyomavirus* or pomovirus* or porprismacovirus* or potamipivirus* or potexvirus* or potyvirus* or pradovirus* or prasinovirus* or pregotovirus* or proboscivirus* or prosimiispumavirus* or protobacilladnavirus* or protoparvovirus* or prtbvirus* or prunevirus* or prymnesiovirus* or psavirus* or pseudovirus* or psimunavirus* or psipapillomavirus* or quadrivirus* or quaranjavirus* or r4virus* or rabovirus* or ranavirus* or raphidovirus* or rb49virus* or rb69virus* or rdjlvirus* or redivirus* or renitovirus* or reovirus* or reptarenavirus* or rer2virus* or respirovirus* or retrovirus* or reyvirus* or rhadinovirus* or rheph4virus* or rhinacovirus* or rhinovirus* or rhizidiovirus* or rhopapillomavirus* or robigovirus* or rogue1virus* or rosadnavirus* or rosavirus* or rosebushvirus* or roseolovirus* or rotavirus* or roymovirus* or rsl2virus* or rslunavirus* or rtpvirus* or rubivirus* or rubulavirus* or rudivirus* or rymovirus* or s16virus* or sadwavirus* or saetivirus* or sakobuvirus* or salivirus* or salmonivirus* or salterprovirus* or sap6virus* or sapelovirus* or sapovirus* or sarbecovirus* or schizot4virus* or sclerodarnavirus* or sclerotimonavirus* or scutavirus* or se1virus* or seadornavirus* or sectovirus* or secunda5virus* or semotivirus* or send513virus* or senecavirus* or senegalvirus* or sep1virus* or septima3virus* or sequivirus* or setracovirus* or seuratvirus* or sextaecvirus* or sfi11virus* or sfi21dt1virus* or shanbavirus* or shangavirus* or shaspivirus* or sheartevirus* or siadenovirus* or sicinivirus* or sigmapapillomavirus* or sigmavirus* or silviavirus* or simiispumavirus* or simplexvirus* or sinaivirus* or sirevirus* or sitaravirus* or sk1virus* or slashvirus* or smoothievirus* or sobemovirus* or socyvirus* or solendovirus* or sopolycivirus* or soupsvirus* or soymovirus* or sp18virus* or sp31virus* or sp58virus* or sp6virus* or spbetavirus* or spiromicrovirus* or spn3virus* or spo1virus* or sprivivirus* or sputnikvirus* or sripuvirus* or ssp2virus* or striwavirus* or suipoxvirus* or sunshinevirus* or suspvirus* or svunavirus* or t1virus* or t4virus* or t5virus* or t7virus* or tankvirus* or tapwovirus* or taupapillomavirus* or tegacovirus* or tenuivirus* or tepovirus* or teschovirus* or tetraparvovirus* or tg1virus* or thetaarterivirus* or thetapapillomavirus* or thetatorquevirus* or thogotovirus* or thottimvirus* or tibrovirus* or tilapinevirus* or tin2virus* or tipravirus* or tiruvirus* or titanvirus* or tl2011virus* or tlsvirus* or tm4virus* or tobamovirus* or tobravirus* or tombusvirus* or topocuvirus* or torchivirus* or torovirus* or torradovirus* or tospovirus* or totivirus* or toursvirus* or tp21virus* or tp84virus* or treisdeltapapillomavirus* or treisepsilonpapillomavirus* or treisetapapillomavirus* or treisiotapapillomavirus* or treiskappapapillomavirus* or treisthetapapillomavirus* or treiszetapapillomavirus* or tremovirus* or triatovirus* or triavirus* or trichomonasvirus* or trichovirus* or trigintaduovirus* or tritimovirus* or tsarbombavirus* or tungrovirus* or tunisvirus* or tupavirus* or turncurtovirus* or turrinivirus* or twortvirus* or tymovirus* or umbravirus* or una4virus* or una961virus* or upsilonpapillomavirus* or v5virus* or varicellovirus* or varicosavirus* or vegasvirus* or velarivirus* or vendettavirus* or vesiculovirus* or vesivirus* or vespertiliovirus* or vhmlvirus* or vi1virus* or victorivirus* or virtovirus* or virus* or vitivirus* or vp5virus* or waikavirus* or wbetavirus* or wenilivirus* or whispovirus* or wildcatvirus* or wizardvirus* or woesvirus* or wphvirus* or wubeivirus* or wuhivirus* or wumivirus* or xipapillomavirus* or xp10virus* or yatapoxvirus* or ydn12virus* or yingvirus* or yuavirus* or yuyuevirus* or zeavirus* or zetaarterivirus* or zetapapillomavirus* or zetatorquevirus*).mp.

11. ("2019 ncov" or "2019nCoV" or "covid 19" or "severe acute respiratory syndrome coronavirus 2" or "sars cov 2").mp.
12. or/7-11
13. 6 and 12
14. (schedul* or timetable* or waiting or appointment? or e-mail or telephone? or electronic mail).tw,kw.
15. (triage or triaging or self-triage or screening or telescreening or tele-screen* or remote or telephone*).tw,kw.
16. (pre-arrival or remote* or check-in or checked in).tw,kw.
17. (visitor? or bathroom? or tele-health or telehealth or videoconf* or video-conf*).tw,kw.
18. exp "Appointments and Schedules"/ or exp Triage/ or exp Telephone/ or exp Electronic Mail/ or exp Videoconferencing/ or exp Telemedicine/
19. or/14-18
20. 13 and 19
21. meta-analysis.pt.
22. meta-analysis/ or systematic review/ or meta-analysis as topic/ or "meta analysis (topic)"/ or "systematic review (topic)"/ or exp technology assessment, biomedical/
23. ((systematic* adj3 (review* or overview*)) or (methodologic* adj3 (review* or overview*))).ti,ab,kw.
24. ((quantitative adj3 (review* or overview* or synthes*)) or (research adj3 (integrati* or overview*))).ti,ab,kw.
25. ((integrative adj3 (review* or overview*)) or (collaborative adj3 (review* or overview*)) or (pool* adj3 analy*)).ti,ab,kf,kw.
26. (data synthes* or data extraction* or data abstraction*).ti,ab,kf,kw.
27. (handsearch* or hand search*).ti,ab,kf,kw.
28. (mantel haenszel or peto or der simonian or dersimonian or fixed effect* or latin square*).ti,ab,kf,kw.
29. (met analy* or metanaly* or technology assessment* or HTA or HTAs or technology overview* or technology appraisal*).ti,ab,kf,kw.
30. (meta regression* or metaregression*).ti,ab,kf,kw.
31. (meta-analy* or metaanaly* or systematic review* or biomedical technology assessment* or bio-medical technology assessment*).mp,hw.
32. (medline or cochrane or pubmed or medlars or embase or cinahl).ti,ab,hw.

33. (cochrane or (health adj2 technology assessment) or evidence report).jw.
34. (comparative adj3 (efficacy or effectiveness)).ti,ab,kf,kw.
35. (outcomes research or relative effectiveness).ti,ab,kf,kw.
36. ((indirect or indirect treatment or mixed-treatment) adj comparison*).ti,ab,kf,kw.
37. or/21-36
38. (Randomized Controlled Trial or Controlled Clinical Trial or Pragmatic Clinical Trial or Equivalence Trial or Clinical Trial, Phase III).pt.
39. Randomized Controlled Trial/
40. exp Randomized Controlled Trials as Topic/
41. "Randomized Controlled Trial (topic)"/
42. Controlled Clinical Trial/ or exp Controlled Clinical Trials as Topic/ or "Controlled Clinical Trial (topic)"/ or Randomization/ or Random Allocation/ or Double-Blind Method/ or Double Blind Procedure/ or Double-Blind Studies/ or Single-Blind Method/ or Single Blind Procedure/ or Single-Blind Studies/ or Placebos/ or Placebo/ or Control Groups/ or Control Group/
43. (random* or sham or placebo*).ti,ab,hw,kf,kw.
44. ((singl* or doubl*) adj (blind* or dumm* or mask*)).ti,ab,hw,kf,kw. 45. ((tripl* or trebl*) adj (blind* or dumm* or mask*)).ti,ab,hw,kf,kw. 46. (control* adj3 (study or studies or trial* or group*)).ti,ab,kf,kw. 47. (Nonrandom* or non random* or non-random* or quasi-random* or quasirandom*).ti,ab,hw,kw.
48. allocated.ti,ab,hw.
49. ((open label or open-label) adj5 (study or studies or trial*)).ti,ab,hw,kw.
50. ((equivalence or superiority or non-inferiority or noninferiority) adj3 (study or studies or trial*)).ti,ab,hw,kw.
51. (pragmatic study or pragmatic studies).ti,ab,hw,kw.
52. ((pragmatic or practical) adj3 trial*).ti,ab,hw,kw.
53. ((quasiexperimental or quasi-experimental) adj3 (study or studies or trial*)).ti,ab,hw,kw.
54. (phase adj3 (III or "3") adj3 (study or studies or trial*)).ti,hw,kw. 55. or/38-54
56. Epidemiologic Studies/ or exp Case Control Studies/ or exp Cohort Studies/
57. (case control or (cohort adj (study or studies)) or cohort analy$ or (follow up adj (study or studies)) or longitudinal or retrospective or cross sectional).tw.
58. Cross-Sectional Studies/
59. or/56-58
60. 37 or 55 or 59
61. 6 and 12 and 19 and 60
62. 20 not 61
63. limit 62 to last 25 years

Key area D and E

1. exp Personal Protective Equipment/
2. (PPE or ((personal or respiratory) adj1 protective equipment)).tw,kf.
3. ((face or mouth or surgical or membrane) adj3 (mask? or guard? or piece? or protector? or protection or mouthpiece? or shield? or respirator?)).tw,kf.

4. (gas mask? or gasmask? or mouthpiece? or facemask?).tw,kf.
5. ((air-purifying or industrial or protective) adj3 respirator?).tw,kf.
6. ((safety adj1 (glasses or lenses)) or goggles).tw,kf.
7. ((eye or mouth or head or clothing or gear) adj3 protect*).tw,kf.
8. (scrubs or gown? or glove?).tw,kf.
9. (N95 or visor?).tw,kf.
10. space suit?.tw,kf.
11. infection control.tw,kf.
12. pc.fs.
13. or/1-12
14. exp Stomatognathic Diseases/
15. exp Dentistry/
16. exp Oral Health/
17. exp Dental Facilities/
18. (dentist* or endodont* or orthodonti* or periodont* or prosthodont* or apicoectom* or gingivectom* or gingivoplast* or glossectom* or "mandibular advancement" or alveolectom* or alveoloplast* or vestibuloplast* or "root canal" or oral or oropharyng* or temporomandibular or TMJ or jaw or jaws or mandibular or maxillofacial or mandible* or maxilla* or "alveolar ridge" or dental or orthognathic or tooth or teeth or occlusion or malocclusion or mal-occlusion or odontolog* or tongue* or glossal or buccal or palatal or palate or palates or labial or lip or lips or gingiva* or gingiviti*).tw,kf.
19. or/14-18
20. 13 and 19
21. exp Viruses/
22. exp Virus Diseases/
23. (viridae or COVID-19 or AIDS or HIV or ebola or zika or "west nile" or shingles or SARS or MERS or chickenpox or smallpox or Chikungunya or epstein-barr or erythema or exanthum or influenza? or flu or HFMD or "heartland virus" or HFRS or hepatitis or herpes or cmeasles or mumps or "nipah virus" or Poliomyelitis or yersiniosis or rubella or salmonellosis or rabies).tw,kf.
24. (aalivirus* or ab18virus* or abouovirus* or abyssovirus* or acadianvirus* or ag3virus* or agatevirus* or agrican357virus* or aichivirus* or albetovirus* or alefpapillomavirus* or alfamovirus* or allexivirus* or allolevivirus* or almendravirus* or alpha3microvirus* or alphaabyssovirus* or alphaarterivirus* or alphabaculovirus* or alphacarmotetravirus* or alphacarmovirus* or alphacoronavirus* or alphaendornavirus* or alphaentomopoxvirus* or alphafusellovirus* or alphaguttavirus* or alphaherpesvirus* or alphainfluenzavirus* or alphaletovirus* or alphamesonivirus* or alphamononivirus* or alphanecrovirus* or alphanodavirus* or alphanudivirus* or alphapapillomavirus* or alphapartitivirus* or alphapermutotetravirus* or alphapleolipovirus*

or alphapolyomavirus* or alphaportoglobovirus* or alpharetrovirus* or alphasphaerolipovirus* or alphaspiravirus* or alphatectivirus* or alphatorquevirus* or alphatristromavirus* or alphaturrivirus* or alphavirus* or amalgavirus* or ambidensovirus* or amdoparvovirus* or amigovirus* or ampelovirus* or ampivirus* or ampobartevirus* or ampullavirus* or anatolevirus* or andecovirus* or andromedavirus* or anphevirus* or anulavirus* or ap22virus* or aparavirus* or aphthovirus* or aplyccavirus* or aquabirnavirus* or aquamavirus* or aquaparamyxovirus* or aquareovirus* or arlivirus* or arv1virus* or ascovirus* or asfivirus* or atadenovirus* or attisvirus* or aumaivirus* or aureusvirus* or aurivirus* or avastrovirus* or avenavirus* or aveparvovirus* or aviadenovirus* or avibirnavirus* or avihepadnavirus* or avihepatovirus* or avipoxvirus* or avisivirus* or avulavirus* or b4virus* or babuvirus* or bacillarnavirus* or badnavirus* or bafinivirus* or balbicanovirus* or banyangvirus* or barnavirus* or barnyardvirus* or bastillevirus* or batrachovirus* or baxtervirus* or bc431virus* or bcep22virus* or bcep78virus* or bcepmuvirus* or bdellomicrovirus* or becurtovirus* or begomovirus* or behecravirus* or beidivirus* or benyvirus* or berhavirus* or bernal13virus* or betaarterivirus* or betabaculovirus* or betacarmovirus* or betacoronavirus* or betaendornavirus* or betaentomopoxvirus* or betafusellovirus* or betaguttavirus* or betaherpesvirus* or betainfluenzavirus* or betalipothrixvirus* or betanecrovirus* or betanodavirus* or betanudivirus* or betapapillomavirus* or betapartitivirus* or betapleolipovirus* or betapolyomavirus* or betaretrovirus* or betasphaerolipovirus* or betatectivirus* or betatetravirus* or betatorquevirus* or beturrivirus* or bevemovirus* or bicaudavirus* or bidensovirus* or bignuzvirus* or biquartavirus* or biseptimavirus* or blosnavirus* or blunervirus* or bocaparvovirus* or bolenivirus* or bongovirus* or bopivirus* or bostovirus* or botrexvirus* or botybirnavirus* or bovismacovirus* or bovispumavirus* or bpp1virus* or bracovirus* or brambyvirus* or brevidensovirus* or bromovirus* or bronvirus* or brujitavirus* or buldecovirus* or buttersvirus* or bxz1virus* or bymovirus* or c2virus* or c5virus* or cadicivirus* or cafeteriavirus* or calicivirus* or camvirus* or capillovirus* or capripoxvirus* or capulavirus* or carbovirus* or cardiovirus* or cardoreovirus* or carlavirus* or casualivirus* or caulimovirus* or cavemovirus* or cba120virus* or cba181virus* or cba41virus* or cbastvirus* or cc31virus* or cd119virus* or cecivirus* or cegacovirus* or centapoxvirus* or cervidpoxvirus* or charlievirus* or charybnivirus* or che8virus* or che9cvirus* or cheravirus* or chibartevirus* or chipapillomavirus* or chipolycivirus* or chivirus* or chlamydiamicrovirus* or chloriridovirus* or chlorovirus* or chordovirus* or chrysovirus* or cilevirus* or circovirus* or citrivirus* or cjw1virus* or clavavirus* or closterovirus* or coccolithovirus* or colacovirus* or coltivirus* or comovirus* or coopervirus* or copiparvovirus* or corndogvirus* or coronavirus* or corticovirus* or cosavirus* or cosmacovirus* or cp1virus* or cp220virus* or cp51virus* or cp8virus* or cr3virus* or cradenivirus* or crinivirus* or cripavirus* or crocodylidpoxvirus* or crohivirus* or cronusvirus* or crustavirus* or cryspovirus* or cucumovirus* or cuevavirus* or curiovirus* or curtovirus* or cvm10virus* or cyclovirus* or cypovirus* or cyprinivirus* or cystovirus* or cytomegalovirus* or cytorhabdovirus* or d3112virus* or d3virus* or debiartevirus* or decacovirus* or decronivirus* or decurrovirus* or deltaarterivirus* or deltabaculovirus* or deltacoronavirus* or deltaflexivirus* or deltainfluenzavirus* or deltalipothrixvirus* or deltapapillomavirus* or deltapartitivirus* or deltapolyomavirus* or deltaretrovirus* or deltatorquevirus* or deltavirus* or demosthenesvirus* or densovirus* or dependoparvovirus* or dfl12virus* or dianthovirus* or diatodnavirus* or dichorhavirus* or dicipivirus* or dinodnavirus* or dinornavirus* or dinovernavirus* or divavirus* or doucettevirus* or dragsmacovirus* or drosmacovirus* or drosmacovirus*2 or dumedivirus* or duvinacovirus* or dyochipapillomavirus* or dyodeltapapillomavirus* or dyoepsilonpapillomavirus* or dyoetapapillomavirus* or dyoiotapapillomavirus* or dyokappapapillomavirus* or dyolambdapapillomavirus* or dyomupapillomavirus* or dyonupapillomavirus* or dyoomegapapillomavirus* or dyoomikronpapillomavirus* or dyophipapillomavirus* or dyopipapillomavirus* or dyopsipapillomavirus* or dyorhopapillomavirus* or dyosigmapapillomavirus* or dyotaupapillomavirus* or dyothetapapillomavirus* or dyoupsilonpapillomavirus* or dyoxipapillomavirus* or dyozetapapillomavirus* or e125virus* or ea214virus* or ea92virus* or eah2virus* or ebolavirus* or eiauvirus* or elvirus* or emaravirus* or embecovirus* or enamovirus* or enselivirus* or enterovirus* or entomobirnavirus* or entomopoxvirus* or ephemerovirus* or epsilon15virus* or epsilonarterivirus* or epsilonpapillomavirus* or epsilonretrovirus* or epsilontorquevirus* or equispumavirus* or eragrovirus* or erbovirus* or errantivirus* or erythroparvovirus* or etaarterivirus* or etapapillomavirus* or etatorquevirus* or eurpobartevirus* or f116virus* or fabavirus* or felispumavirus* or felixo1virus* or feravirus* or ferlavirus* or ff47virus* or fibrovirus* or fijivirus* or fishburnevirus* or flavivirus* or foveavirus* or fri1virus* or furovirus* or g4microvirus* or g7cvirus* or gaiavirus* or gallantivirus* or gallivirus* or gammaarterivirus* or gammabaculovirus* or gammacarmovirus* or gammacoronavirus* or gammaentomopoxvirus* or gammaherpesvirus* or gammainfluenzavirus* or gammalipothrixvirus* or gammapapillomavirus* or gammapartitivirus* or gammapleolipovirus* or gammapolyomavirus* or gammaretrovirus* or gammasphaerolipovirus* or gammatorquevirus* or gemycircularvirus* or gemyduguivirus* or gemygorvirus* or gemykibivirus* or gemykolovirus* or gemykrogvirus* or gemykroznavirus* or gemytondvirus* or gemyvongvirus* or giardiavirus* or gilesvirus* or globulovirus* or glossinavirus* or goravirus* or gordonvirus* or gordtnkvirus* or goukovirus* or grablovirus* or granulovirus* or gyrovirus* or habenivirus* or hanalivirus* or hapavirus* or hapunavirus* or harkavirus* or harrisonvirus* or hartmanivirus* or hawkeyevirus* or hedartevirus* or hemivirus* or henipavirus* or hepacivirus* or hepandensovirus* or hepatovirus* or herbevirus* or herdecovirus* or herpesvirus* or hibecovirus* or higrevirus* or hk578virus* or hk97virus* or hordeivirus* or horwuvirus* or hp1virus* or hubavirus* or huchismacovirus* or hudivirus* or hudovirus* or hunnivirus* or hupolycivirus* or hypovirus* or hytrovirus* or ichnovirus* or ichtadenovirus* or ictalurivirus* or idaeovirus* or idnoreovirus* or iflavirus* or igacovirus* or ilarvirus* or iltovirus* or infratovirus* or inovirus* or inshuvirus* or invictavirus* or iotaarterivirus* or iotapapillomavirus* or iotatorquevirus* or ipomovirus* or iridovirus* or isavirus* or iteradensovirus* or jd18virus* or jenstvirus* or jerseyvirus* or jimmervirus* or jonvirus* or js98virus* or jwalphavirus* or jwxvirus* or k1gvirus* or kadilivirus* or kaftartevirus* or kappaarterivirus* or kappapapillomavirus* or kappatorquevirus* or karsalivirus* or kayvirus* or kelleziovirus* or kf1virus* or kieseladnavirus* or kigiartevirus* or kobuvirus* or korravirus* or kp15virus* or kp32virus* or kp34virus* or kp36virus* or kpp10virus* or kpp25virus* or kunsagivirus* or l5virus* or labyrnavirus* or lagovirus* or lambdaarterivirus* or lambdapapillomavirus* or lambdatorquevirus* or lambdavirus* or laroyevirus* or lausannevirus* or ledantevirus* or leishmaniavirus* or lentivirus* or leporipoxvirus* or letovirus* or levivirus* or liefievirus* or likavirus* or limestonevirus* or limnipivirus* or lincruvirus* or lineavirus* or lit1virus* or lmd1virus* or loanvirus* or lolavirus* or luchacovirus* or luteovirus* or luz24virus* or luz7virus* or lymphocryptovirus* or lymphocystivirus* or lyssavirus* or m12virus* or macanavirus* or macavirus* or machinavirus* or machlomovirus* or macluravirus* or macronovirus* or maculavirus* or mamastrovirus* or mammarenavirus* or mandarivirus* or marafivirus* or marburgvirus* or mardivirus* or marnavirus* or marseillevirus* or marthavirus* or marvinvirus* or mastadenovirus* or mastrevirus* or mavirus* or megabirnavirus* or megalocytivirus* or megrivirus* or menolivirus* or merbecovirus* or metapneumovirus* or metavirus* or milecovirus* or mimivirus* or mimoreovirus* or minacovirus* or minunacovirus* or mischivirus* or mitartevirus* or mitovirus* or mivirus* or mobatvirus* or mobuvirus* or molluscipoxvirus* or mooglevirus* or moonvirus* or moordecovirus* or morbillivirus* or mosavirus* or msw3virus* or muarterivirus* or mudcatvirus* or mupapillomavirus* or muromegalovirus* or muscavirus* or muvirus* or mycoflexivirus* or mycoreovirus* or myohalovirus* or myotacovirus* or n15virus* or n4virus* or namcalivirus* or nanovirus* or narnavirus* or nebovirus* or nepovirus* or nidovirus* or nit1virus* or nobecovirus* or nona33virus* or nonagvirus* or nonanavirus* or norovirus* or novirhabdovirus* or np1virus* or nucleopolyhedrovirus* or nucleorhabdovirus* or nudivirus* or nupapillomavirus* or nyavirus* or nyctacovirus* or nyfulvavirus* or nymphadoravirus* or ofalivirus* or okavirus* or oleavirus* or omegapapillomavirus* or omegatetravirus* or omegavirus* or omikronpapillomavirus* or oncotshavirus* or oncovirus* or ophiovirus* or orbivirus* or orinovirus* or orivirus* or orthobornavirus* or orthobunyavirus* or orthohantavirus* or orthohepadnavirus* or orthohepevirus* or orthonairovirus* or orthophasmavirus* or orthopneumovirus* or orthopoxvirus* or orthoreovirus* or oryzavirus* or oscivirus* or ostreavirus* or ourmiavirus* or p100virus* or p12002virus* or p12024virus* or p1virus* or p22virus* or p23virus* or p2virus* or p68virus* or p70virus* or pa6virus* or pagevirus* or paguronivirus* or pakpunavirus* or pamx74virus* or panicovirus* or papanivirus* or parapoxvirus* or parechovirus* or

partitivirus* or pasivirus* or passerivirus* or patiencevirus* or pbi1virus* or pbunavirus* or pecluvirus* or pedacovirus* or pedartevirus* or pegivirus* or pelarspovirus* or penstyldensovirus* or pepy6virus* or percavirus* or perhabdovirus* or peropuvirus* or pestivirus* or petuvirus* or pfr1virus* or pg1virus* or phaeovirus* or phasivirus* or phayoncevirus* or phi29virus* or phic31virus* or phicbkvirus* or phieco32virus* or phietavirus* or phifelvirus* or phijl1virus* or phikmvvirus* or phikzvirus* or phipapillomavirus* or phix174microvirus* or phlebovirus* or phytoreovirus* or picobirnavirus* or pidchovirus* or pipapillomavirus* or pipefishvirus* or pis4avirus* or piscihepevirus* or planidovirus* or plasmavirus* or platypuvirus* or plectrovirus* or plotvirus* or poacevirus* or pocjvirus* or polemovirus* or polerovirus* or polyomavirus* or pomovirus* or porprismacovirus* or potamipivirus* or potexvirus* or potyvirus* or pradovirus* or prasinovirus* or pregotovirus* or proboscivirus* or prosimiispumavirus* or protobacilladnavirus* or protoparvovirus* or prtbvirus* or prunevirus* or prymnesiovirus* or psavirus* or pseudovirus* or psimunavirus* or psipapillomavirus* or quadrivirus* or quaranjavirus* or r4virus* or rabovirus* or ranavirus* or raphidovirus* or rb49virus* or rb69virus* or rdjlvirus* or redivirus* or renitovirus* or reovirus* or reptarenavirus* or rer2virus* or respirovirus* or retrovirus* or reyvirus* or rhadinovirus* or rheph4virus* or rhinacovirus* or rhinovirus* or rhizidiovirus* or rhopapillomavirus* or robigovirus* or rogue1virus* or rosadnavirus* or rosavirus* or rosebushvirus* or roseolovirus* or rotavirus* or roymovirus* or rsl2virus* or rslunavirus* or rtpvirus* or rubivirus* or rubulavirus* or rudivirus* or rymovirus* or s16virus* or sadwavirus* or saetivirus* or sakobuvirus* or salivirus* or salmonivirus* or salterprovirus* or sap6virus* or sapelovirus* or sapovirus* or sarbecovirus* or schizot4virus* or sclerodarnavirus* or sclerotimonavirus* or scutavirus* or se1virus* or seadornavirus* or sectovirus* or secunda5virus* or semotivirus* or send513virus* or senecavirus* or senegalvirus* or sep1virus* or septima3virus* or sequivirus* or setracovirus* or seuratvirus* or sextaecvirus* or sfi11virus* or sfi21dt1virus* or shanbavirus* or shangavirus* or shaspivirus* or sheartevirus* or siadenovirus* or sicinivirus* or sigmapapillomavirus* or sigmavirus* or silviavirus* or simiispumavirus* or simplexvirus* or sinaivirus* or sirevirus* or sitaravirus* or sk1virus* or slashvirus* or smoothievirus* or sobemovirus* or socyvirus* or solendovirus* or sopolycivirus* or soupsvirus* or soymovirus* or sp18virus* or sp31virus* or sp58virus* or sp6virus* or spbetavirus* or spiromicrovirus* or spn3virus* or spo1virus* or sprivivirus* or sputnikvirus* or sripuvirus* or ssp2virus* or striwavirus* or suipoxvirus* or sunshinevirus* or suspvirus* or svunavirus* or t1virus* or t4virus* or t5virus* or t7virus* or tankvirus* or tapwovirus* or taupapillomavirus* or tegacovirus* or tenuivirus* or tepovirus* or teschovirus* or tetraparvovirus* or tg1virus* or thetaarterivirus* or thetapapillomavirus* or thetatorquevirus* or thogotovirus* or thottimvirus* or tibrovirus* or tilapinevirus* or tin2virus* or tipravirus* or tiruvirus* or titanvirus* or tl2011virus* or tlsvirus* or tm4virus* or tobamovirus* or tobravirus* or tombusvirus* or topocuvirus* or torchivirus* or torovirus* or torradovirus* or tospovirus* or totivirus* or toursvirus* or tp21virus* or tp84virus* or treisdeltapapillomavirus* or treisepsilonpapillomavirus* or treisetapapillomavirus* or treisiotapapillomavirus* or treiskappapapillomavirus* or treisthetapapillomavirus* or treiszetapapillomavirus* or tremovirus* or triatovirus* or triavirus* or trichomonasvirus* or trichovirus* or trigintaduovirus* or tritimovirus* or tsarbombavirus* or tungrovirus* or tunisvirus* or tupavirus* or turncurtovirus* or turrinivirus* or twortvirus* or tymovirus* or umbravirus* or una4virus* or una961virus* or upsilonpapillomavirus* or v5virus* or varicellovirus* or varicosavirus* or vegasvirus* or velarivirus* or vendettavirus* or vesiculovirus* or vesivirus* or vespertiliovirus* or vhmlvirus* or vi1virus* or victorivirus* or virtovirus* or virus* or vitivirus* or vp5virus* or waikavirus* or wbetavirus* or wenilivirus* or whispovirus* or wildcatvirus* or wizardvirus* or woesvirus* or wphvirus* or wubeivirus* or wuhivirus* or wumivirus* or xipapillomavirus* or xp10virus* or yatapoxvirus* or ydn12virus* or yingvirus* or yuavirus* or yuyuevirus* or zeavirus* or zetaarterivirus* or zetapapillomavirus* or zetatorquevirus*).mp.
25. ("2019 ncov" or "2019nCoV" or "covid 19" or "severe acute respiratory syndrome coronavirus 2" or "sars cov 2").mp.
26. or/21-25
27. 20 and 26
28. or/1-10
29. 19 and 26 and 28
30. limit 29 to last 25 years

Key areas F and G

1. exp Stomatognathic Diseases/
2. exp Dentistry/
3. exp Oral Health/
4. exp Dental Facilities/
5. (dentist* or endodont* or orthodonti* or periodont* or prosthodont* or apicoectom* or gingivectom* or gingivoplast* or glossectom* or "mandibular advancement" or alveolectom* or alveoloplast* or vestibuloplast* or "root canal" or oral or oropharyng* or temporomandibular or TMJ or jaw or jaws or mandibular or maxillofacial or mandible* or maxilla* or "alveolar ridge" or dental or orthognathic or tooth or teeth or occlusion or malocclusion or mal-occlusion or odontolog* or tongue* or glossal or buccal or palatal or palate or palates or labial or lip or lips or gingiva* or gingiviti*).tw,kw.
6. or/1-5
7. exp Viruses/
8. exp Virus Diseases/
9. (viridae or COVID-19 or AIDS or HIV or ebola or zika or "west nile" or shingles or SARS or MERS or chickenpox or smallpox or Chikungunya or epstein-barr or erythema or exanthum or influenza? or flu or HFMD or "heartland virus" or HFRS or hepatitis or herpes or cmeasles or mumps or "nipah virus" or Poliomyelitis or yersiniosis or rubella or salmonellosis or rabies).tw,kw.
10. (aalivirus* or ab18virus* or abouovirus* or abyssovirus* or acadianvirus* or ag3virus* or agatevirus* or agrican357virus* or aichivirus* or albetovirus* or alefpapillomavirus* or alfamovirus* or allexivirus* or allolevivirus* or almendravirus* or alpha3microvirus* or alphaabyssovirus* or alphaarterivirus* or alphabaculovirus* or alphacarmotetravirus* or alphacarmovirus* or alphacoronavirus* or alphaendornavirus* or alphaentomopoxvirus* or alphafusellovirus* or alphaguttavirus* or alphaherpesvirus* or alphainfluenzavirus* or alphaletovirus* or alphamesonivirus* or alphamononivirus* or alphanecrovirus* or alphanodavirus* or alphanudivirus* or alphapapillomavirus* or alphapartitivirus* or alphapermutotetravirus* or alphapleolipovirus* or alphapolyomavirus* or alphaportoglobovirus* or alpharetrovirus* or alphasphaerolipovirus* or alphaspiravirus* or alphatectivirus* or alphatorquevirus* or alphatristromavirus* or alphaturrivirus* or alphavirus* or amalgavirus* or ambidensovirus* or amdoparvovirus* or amigovirus* or ampelovirus* or ampivirus* or ampobartevirus* or ampullavirus* or anatolevirus* or andecovirus* or andromedavirus* or anphevirus* or anulavirus* or ap22virus* or aparavirus* or aphthovirus* or aplyccavirus* or aquabirnavirus* or aquamavirus* or aquaparamyxovirus* or aquareovirus* or arlivirus* or arv1virus* or ascovirus* or asfivirus* or atadenovirus* or attisvirus* or aumaivirus* or aureusvirus* or aurivirus* or avastrovirus* or avenavirus* or aveparvovirus* or aviadenovirus* or avibirnavirus* or avihepadnavirus* or avihepatovirus* or avipoxvirus* or avisivirus* or avulavirus* or b4virus* or babuvirus* or bacillarnavirus* or badnavirus* or bafinivirus* or balbicanovirus* or banyangvirus* or barnavirus* or barnyardvirus* or bastillevirus* or batrachovirus* or baxtervirus* or bc431virus* or bcep22virus* or bcep78virus* or bcepmuvirus* or bdellomicrovirus* or becurtovirus* or begomovirus* or behecravirus* or beidivirus* or benyvirus* or berhavirus* or bernal13virus* or betaarterivirus* or betabaculovirus* or betacarmovirus* or betacoronavirus* or betaendornavirus* or betaentomopoxvirus* or betafusellovirus* or betaguttavirus* or betaherpesvirus* or betainfluenzavirus* or

betalipothrixvirus* or betanecrovirus* or betanodavirus* or betanudivirus* or betapapillomavirus* or betapartitivirus* or betapleolipovirus* or betapolyomavirus* or betaretrovirus* or betasphaerolipovirus* or betatectivirus* or betatetravirus* or betatorquevirus* or beturrivirus* or bevemovirus* or bicaudavirus* or bidensovirus* or bignuzvirus* or biquartavirus* or biseptimavirus* or blosnavirus* or blunervirus* or bocaparvovirus* or bolenivirus* or bongovirus* or bopivirus* or bostovirus* or botrexvirus* or botybirnavirus* or bovismacovirus* or bovispumavirus* or bpp1virus* or bracovirus* or brambyvirus* or brevidensovirus* or bromovirus* or bronvirus* or brujitavirus* or buldecovirus* or buttersvirus* or bxz1virus* or bymovirus* or c2virus* or c5virus* or cadicivirus* or cafeteriavirus* or calicivirus* or camvirus* or capillovirus* or capripoxvirus* or capulavirus* or carbovirus* or cardiovirus* or cardoreovirus* or carlavirus* or casualivirus* or caulimovirus* or cavemovirus* or cba120virus* or cba181virus* or cba41virus* or cbastvirus* or cc31virus* or cd119virus* or cecivirus* or cegacovirus* or centapoxvirus* or cervidpoxvirus* or charlievirus* or charybnivirus* or che8virus* or che9cvirus* or cheravirus* or chibartevirus* or chipapillomavirus* or chipolycivirus* or chivirus* or chlamydiamicrovirus* or chloriridovirus* or chlorovirus* or chordovirus* or chrysovirus* or cilevirus* or circovirus* or citrivirus* or cjw1virus* or clavavirus* or closterovirus* or coccolithovirus* or colacovirus* or coltivirus* or comovirus* or coopervirus* or copiparvovirus* or corndogvirus* or coronavirus* or corticovirus* or cosavirus* or cosmacovirus* or cp1virus* or cp220virus* or cp51virus* or cp8virus* or cr3virus* or cradenivirus* or crinivirus* or cripavirus* or crocodylidpoxvirus* or crohivirus* or cronusvirus* or crustavirus* or cryspovirus* or cucumovirus* or cuevavirus* or curiovirus* or curtovirus* or cvm10virus* or cyclovirus* or cypovirus* or cyprinivirus* or cystovirus* or cytomegalovirus* or cytorhabdovirus* or d3112virus* or d3virus* or debiartevirus* or decacovirus* or decronivirus* or decurrovirus* or deltaarterivirus* or deltabaculovirus* or deltacoronavirus* or deltaflexivirus* or deltainfluenzavirus* or deltalipothrixvirus* or deltapapillomavirus* or deltapartitivirus* or deltapolyomavirus* or deltaretrovirus* or deltatorquevirus* or deltavirus* or demosthenesvirus* or densovirus* or dependoparvovirus* or dfl12virus* or dianthovirus* or diatodnavirus* or dichorhavirus* or dicipivirus* or dinodnavirus* or dinornavirus* or dinovernavirus* or divavirus* or doucettevirus* or dragsmacovirus* or drosmacovirus* or drosmacovirus*2 or dumedivirus* or duvinacovirus* or dyochipapillomavirus* or dyodeltapapillomavirus* or dyoepsilonpapillomavirus* or dyoetapapillomavirus* or dyoiotapapillomavirus* or dyokappapapillomavirus* or dyolambdapapillomavirus* or dyomupapillomavirus* or dyonupapillomavirus* or dyoomegapapillomavirus* or dyoomikronpapillomavirus* or dyophipapillomavirus* or dyopipapillomavirus* or dyopsipapillomavirus* or dyorhopapillomavirus* or dyosigmapapillomavirus* or dyotaupapillomavirus* or dyothetapapillomavirus* or dyoupsilonpapillomavirus* or dyoxipapillomavirus* or dyozetapapillomavirus* or e125virus* or ea214virus* or ea92virus* or eah2virus* or ebolavirus* or eiauvirus* or elvirus* or emaravirus* or embecovirus* or enamovirus* or enselivirus* or enterovirus* or entomobirnavirus* or entomopoxvirus* or ephemerovirus* or epsilon15virus* or epsilonarterivirus* or epsilonpapillomavirus* or epsilonretrovirus* or epsilontorquevirus* or equispumavirus* or eragrovirus* or erbovirus* or errantivirus* or erythroparvovirus* or etaarterivirus* or etapapillomavirus* or etatorquevirus* or eurpobartevirus* or f116virus* or fabavirus* or felispumavirus* or felixo1virus* or feravirus* or ferlavirus* or ff47virus* or fibrovirus* or fijivirus* or fishburnevirus* or flavivirus* or foveavirus* or fri1virus* or furovirus* or g4microvirus* or g7cvirus* or gaiavirus* or gallantivirus* or gallivirus* or gammaarterivirus* or gammabaculovirus* or gammacarmovirus* or gammacoronavirus* or gammaentomopoxvirus* or gammaherpesvirus* or gammainfluenzavirus* or gammalipothrixvirus* or gammapapillomavirus* or gammapartitivirus* or gammapleolipovirus* or gammapolyomavirus* or gammaretrovirus* or gammasphaerolipovirus* or gammatorquevirus* or gemycircularvirus* or gemyduguivirus* or gemygorvirus* or gemykibivirus* or gemykolovirus* or gemykrogvirus* or gemykroznavirus* or gemytondvirus* or gemyvongvirus* or giardiavirus* or gilesvirus* or globulovirus* or glossinavirus* or goravirus* or gordonvirus* or gordtnkvirus* or goukovirus* or grablovirus* or granulovirus* or gyrovirus* or habenivirus* or hanalivirus* or hapavirus* or hapunavirus* or harkavirus* or harrisonvirus* or hartmanivirus* or hawkeyevirus* or hedartevirus* or hemivirus* or henipavirus* or hepacivirus* or hepandensovirus* or hepatovirus* or herbevirus* or herdecovirus* or herpesvirus* or hibecovirus* or higrevirus* or hk578virus* or hk97virus* or hk97virus* or hordeivirus* or horwuvirus* or hp1virus* or hubavirus* or huchismacovirus* or hudivirus* or hudovirus* or hunnivirus* or hupolycivirus* or hypovirus* or hytrovirus* or ichnovirus* or ichtadenovirus* or ictalurivirus* or idaeovirus* or idnoreovirus* or iflavirus* or igacovirus* or ilarvirus* or iltovirus* or infratovirus* or inovirus* or inshuvirus* or invictavirus* or iotaarterivirus* or iotapapillomavirus* or iotatorquevirus* or ipomovirus* or iridovirus* or isavirus* or iteradensovirus* or jd18virus* or jenstvirus* or jerseyvirus* or jimmervirus* or jonvirus* or js98virus* or jwalphavirus* or jwxvirus* or k1gvirus* or kadilivirus* or kaftartevirus* or kappaarterivirus* or kappapapillomavirus* or kappatorquevirus* or karsalivirus* or kayvirus* or kelleziovirus* or kf1virus* or kieseladnavirus* or kigiartevirus* or kobuvirus* or korravirus* or kp15virus* or kp32virus* or kp34virus* or kp36virus* or kpp10virus* or kpp25virus* or kunsagivirus* or l5virus* or labyrnavirus* or lagovirus* or lambdaarterivirus* or lambdapapillomavirus* or lambdatorquevirus* or lambdavirus* or laroyevirus* or lausannevirus* or ledantevirus* or leishmaniavirus* or lentivirus* or leporipoxvirus* or letovirus* or levivirus* or liefievirus* or likavirus* or limestonevirus* or limnipivirus* or lincruvirus* or lineavirus* or lit1virus* or lmd1virus* or loanvirus* or lolavirus* or luchacovirus* or luteovirus* or luz24virus* or luz7virus* or lymphocryptovirus* or lymphocystivirus* or lyssavirus* or m12virus* or macanavirus* or macavirus* or machinavirus* or machlomovirus* or macluravirus* or macronovirus* or maculavirus* or mamastrovirus* or mammarenavirus* or mandarivirus* or marafivirus* or marburgvirus* or mardivirus* or marnavirus* or marseillevirus* or marthavirus* or marvinvirus* or mastadenovirus* or mastrevirus* or mavirus* or megabirnavirus* or megalocytivirus* or megrivirus* or menolivirus* or merbecovirus* or metapneumovirus* or metavirus* or milecovirus* or mimivirus* or mimoreovirus* or minacovirus* or minunacovirus* or mischivirus* or mitartevirus* or mitovirus* or mivirus* or mobatvirus* or mobuvirus* or molluscipoxvirus* or mooglevirus* or moonvirus* or moordecovirus* or morbillivirus* or mosavirus* or msw3virus* or muarterivirus* or mudcatvirus* or mupapillomavirus* or muromegalovirus* or muscavirus* or muvirus* or mycoflexivirus* or mycoreovirus* or myohalovirus* or myotacovirus* or n15virus* or n4virus* or namcalivirus* or nanovirus* or narnavirus* or nebovirus* or nepovirus* or nidovirus* or nit1virus* or nobecovirus* or nona33virus* or nonagvirus* or nonanavirus* or norovirus* or novirhabdovirus* or np1virus* or nucleopolyhedrovirus* or nucleorhabdovirus* or nudivirus* or nupapillomavirus* or nyavirus* or nyctacovirus* or nyfulvavirus* or nymphadoravirus* or ofalivirus* or okavirus* or oleavirus* or omegapapillomavirus* or omegatetravirus* or omegavirus* or omikronpapillomavirus* or oncotshavirus* or oncovirus* or ophiovirus* or orbivirus* or orinovirus* or orivirus* or orthobornavirus* or orthobunyavirus* or orthohantavirus* or orthohepadnavirus* or orthohepevirus* or orthonairovirus* or orthophasmavirus* or orthopneumovirus* or orthopoxvirus* or orthoreovirus* or oryzavirus* or oscivirus* or ostreavirus* or ourmiavirus* or p100virus* or p12002virus* or p12024virus* or p1virus* or p22virus* or p23virus* or p2virus* or p68virus* or p70virus* or pa6virus* or pagevirus* or paguronivirus* or pakpunavirus* or pamx74virus* or panicovirus* or papanivirus* or parapoxvirus* or parechovirus* or partitivirus* or pasivirus* or passerivirus* or patiencevirus* or pbi1virus* or pbunavirus* or pecluvirus* or pedacovirus* or pedartevirus* or pegivirus* or pelarspovirus* or penstyldensovirus* or pepy6virus* or percavirus* or perhabdovirus* or peropuvirus* or pestivirus* or petuvirus* or pfr1virus* or pg1virus* or phaeovirus* or phasivirus* or phayoncevirus* or phi29virus* or phic31virus* or phicbkvirus* or phieco32virus* or phietavirus* or phifelvirus* or phijl1virus* or phikmvvirus* or phikzvirus* or phipapillomavirus* or phix174microvirus* or phlebovirus* or phytoreovirus* or picobirnavirus* or pidchovirus* or pipapillomavirus* or pipefishvirus* or pis4avirus* or piscihepevirus* or planidovirus* or plasmavirus* or platypuvirus* or plectrovirus* or plotvirus* or poacevirus* or pocjvirus* or polemovirus* or polerovirus* or polyomavirus* or pomovirus* or porprismacovirus* or potamipivirus* or potexvirus* or potyvirus* or pradovirus* or prasinovirus* or pregotovirus* or proboscivirus* or prosimiispumavirus* or protobacilladnavirus* or protoparvovirus* or prtbvirus* or prunevirus* or prymnesiovirus* or psavirus* or pseudovirus* or psimunavirus* or psipapillomavirus* or quadrivirus* or quaranjavirus* or r4virus* or rabovirus* or ranavirus* or raphidovirus* or rb49virus* or rb69virus* or rdjlvirus* or redivirus* or renitovirus* or reovirus* or reptarenavirus* or rer2virus* or respirovirus* or retrovirus* or reyvirus* or rhadinovirus* or rheph4virus* or

rhinacovirus* or rhinovirus* or rhizidiovirus* or rhopapillomavirus* or robigovirus* or rogue1virus* or rosadnavirus* or rosavirus* or rosebushvirus* or roseolovirus* or rotavirus* or roymovirus* or rsl2virus* or rslunavirus* or rtpvirus* or rubivirus* or rubulavirus* or rudivirus* or rymovirus* or s16virus* or sadwavirus* or saetivirus* or sakobuvirus* or salivirus* or salmonivirus* or salterprovirus* or sap6virus* or sapelovirus* or sapovirus* or sarbecovirus* or schizot4virus* or sclerodarnavirus* or sclerotimonavirus* or scutavirus* or se1virus* or seadornavirus* or sectovirus* or secunda5virus* or semotivirus* or send513virus* or senecavirus* or senegalvirus* or sep1virus* or septima3virus* or sequivirus* or setracovirus* or seuratvirus* or sextaecvirus* or sfi11virus* or sfi21dt1virus* or shanbavirus* or shangavirus* or shaspivirus* or sheartevirus* or siadenovirus* or sicinivirus* or sigmapapillomavirus* or sigmavirus* or silviavirus* or simiispumavirus* or simplexvirus* or sinaivirus* or sirevirus* or sitaravirus* or sk1virus* or slashvirus* or smoothievirus* or sobemovirus* or socyvirus* or solendovirus* or sopolycivirus* or soupsvirus* or soymovirus* or sp18virus* or sp31virus* or sp58virus* or sp6virus* or spbetavirus* or spiromicrovirus* or spn3virus* or spo1virus* or sprivivirus* or sputnikvirus* or sripuvirus* or ssp2virus* or striwavirus* or suipoxvirus* or sunshinevirus* or suspvirus* or svunavirus* or t1virus* or t4virus* or t5virus* or t7virus* or tankvirus* or tapwovirus* or taupapillomavirus* or tegacovirus* or tenuivirus* or tepovirus* or teschovirus* or tetraparvovirus* or tg1virus* or thetaarterivirus* or thetapapillomavirus* or thetatorquevirus* or thogotovirus* or thottimvirus* or tibrovirus* or tilapinevirus* or tin2virus* or tipravirus* or tiruvirus* or titanvirus* or tl2011virus* or tlsvirus* or tm4virus* or tobamovirus* or tobravirus* or tombusvirus* or topocuvirus* or torchivirus* or torovirus* or torradovirus* or tospovirus* or totivirus* or toursvirus* or tp21virus* or tp84virus* or treisdeltapapillomavirus* or treisepsilonpapillomavirus* or treisetapapillomavirus* or treisiotapapillomavirus* or treiskappapapillomavirus* or treisthetapapillomavirus* or treiszetapapillomavirus* or tremovirus* or triatovirus* or triavirus* or trichomonasvirus* or trichovirus* or trigintaduovirus* or tritimovirus* or tsarbombavirus* or tungrovirus* or tunisvirus* or tupavirus* or turncurtovirus* or turrinivirus* or twortvirus* or tymovirus* or umbravirus* or una4virus* or una961virus* or upsilonpapillomavirus* or v5virus* or varicellovirus* or varicosavirus* or vegasvirus* or velarivirus* or vendettavirus* or vesiculovirus* or vesivirus* or vespertiliovirus* or vhmlvirus* or vi1virus* or victorivirus* or virtovirus* or virus* or vitivirus* or vp5virus* or waikavirus* or wbetavirus* or wenilivirus* or whispovirus* or wildcatvirus* or wizardvirus* or woesvirus* or wphvirus* or wubeivirus* or wuhivirus* or wumivirus* or xipapillomavirus* or xp10virus* or yatapoxvirus* or ydn12virus* or yingvirus* or yuavirus* or yuyuevirus* or zeavirus* or zetaarterivirus* or zetapapillomavirus* or zetatorquevirus*).mp.
11. ("2019 ncov" or "2019nCoV" or "covid 19" or "severe acute respiratory syndrome coronavirus 2" or "sars cov 2").mp.
12. or/7-11
13. exp Aerosols/
14. (aerosol or aerosols or aerosoli?ation).tw,kw. or bio-aerosol.mp. or bio-aerosols.tw,kw.
15. (droplet? or sneeze? or splatter or AGP).tw,kw.
16. (handpiece? or hand piece? or rotary or scaler? or respirator or respirators or suction? or drill*).tw,kw.
17. 14 or 15 or 16
18. 6 and 12 and 17

Key area H

1. exp Stomatognathic Diseases/
2. exp Dentistry/
3. exp Oral Health/
4. exp Dental Facilities/
5. (dentist* or endodont* or orthodonti* or periodont* or prosthodont* or apicoectom* or gingivectom* or gingivoplast* or glossectom* or "mandibular advancement" or alveolectom* or alveoloplast* or vestibuloplast* or "root canal" or oral or oropharyng* or temporomandibular or TMJ or jaw or jaws or mandibular or maxillofacial or mandible* or maxilla* or "alveolar ridge" or dental or orthognathic or tooth or teeth or occlusion or malocclusion or mal-occlusion or odontolog* or tongue* or glossal or buccal or palatal or palate or palates or labial or lip or lips or gingiva* or gingiviti*).tw,kf.
6. or/1-5
7. exp Viruses/
8. exp Virus Diseases/
9. (viridae or COVID-19 or AIDS or HIV or ebola or zika or "west nile" or shingles or SARS or MERS or chickenpox or smallpox or Chikungunya or epstein-barr or erythema or exanthum or influenza? or flu or HFMD or "heartland virus" or HFRS or hepatitis or herpes or cmeasles or mumps or "nipah virus" or Poliomyelitis or yersiniosis or rubella or salmonellosis or rabies).tw,kf.
10. (aalivirus* or ab18virus* or abouovirus* or abyssovirus* or acadianvirus* or ag3virus* or agatevirus* or agrican357virus* or aichivirus* or albetovirus* or alefpapillomavirus* or alfamovirus* or allexivirus* or allolevirus* or almendravirus* or alpha3microvirus* or alphaabyssovirus* or alphaarterivirus* or alphabaculovirus* or alphacarmotetravirus* or alphacarmovirus* or alphacoronavirus* or alphaendornavirus* or alphaentomopoxvirus* or alphafusellovirus* or alphaguttavirus* or alphaherpesvirus* or alphainfluenzavirus* or alphaletovirus* or alphamesonivirus* or alphamononivirus* or alphanecrovirus* or alphanodavirus* or alphanudivirus* or alphapapillomavirus* or alphapartitivirus* or alphapermutotetravirus* or alphapleolipovirus* or alphapolyomavirus* or alphaportoglobovirus* or alpharetrovirus* or alphasphaerolipovirus* or alphaspiravirus* or alphatectivirus* or alphatorquevirus* or alphatristromavirus* or alphaturrivirus* or alphavirus* or amalgavirus* or ambidensovirus* or amdoparvovirus* or amigovirus* or ampelovirus* or ampivirus* or ampobartevirus* or ampullavirus* or anatolevirus* or andecovirus* or andromedavirus* or anphevirus* or anulavirus* or ap22virus* or aparavirus* or aphthovirus* or aplyccavirus* or aquabirnavirus* or aquamavirus* or aquaparamyxovirus* or aquareovirus* or arlivirus* or arv1virus* or ascovirus* or asfivirus* or atadenovirus* or attisvirus* or aumaivirus* or aureusvirus* or aurivirus* or avastrovirus* or avenavirus* or aveparvovirus* or aviadenovirus* or avibirnavirus* or avihepadnavirus* or avihepatovirus* or avipoxvirus* or avisivirus* or avulavirus* or b4virus* or babuvirus* or bacillarnavirus* or badnavirus* or bafinivirus* or balbicanovirus* or banyangvirus* or barnavirus* or barnyardvirus* or bastillevirus* or batrachovirus* or baxtervirus* or bc431virus* or bcep22virus* or bcep78virus* or bcepmuvirus* or bdellomicrovirus* or becurtovirus* or begomovirus* or behecravirus* or beidivirus* or benyvirus* or berhavirus* or bernal13virus* or betaarterivirus* or betabaculovirus* or betacarmovirus* or betacoronavirus* or betaendornavirus* or betaentomopoxvirus* or betafusellovirus* or betaguttavirus* or betaherpesvirus* or betainfluenzavirus* or betalipothrixvirus* or betanecrovirus* or betanodavirus* or betanudivirus* or betapapillomavirus* or betapartitivirus* or betapleolipovirus* or betapolyomavirus* or betaretrovirus* or betasphaerolipovirus* or betatectivirus* or betatetravirus* or betatorquevirus* or beturrivirus* or bevemovirus* or bicaudavirus* or bidensovirus* or bignuzvirus* or biquartavirus* or biseptimavirus* or blosnavirus* or blunervirus* or bocaparvovirus* or bolenivirus* or bongovirus* or bopivirus* or bostovirus* or botrexvirus* or botybirnavirus* or bovismacovirus* or bovispumavirus* or bpp1virus* or bracovirus* or brambyvirus* or brevidensovirus* or bromovirus* or bronvirus* or brujitavirus* or buldecovirus* or buttersvirus* or bxz1virus* or bymovirus* or c2virus* or c5virus* or cadicivirus* or cafeteriavirus* or calicivirus* or camvirus* or capillovirus* or capripoxvirus* or capulavirus* or carbovirus* or cardiovirus* or cardoreovirus* or carlavirus* or casualivirus* or caulimovirus* or cavemovirus* or cba120virus* or cba181virus* or cba41virus* or cbastvirus* or cc31virus* or cd119virus* or cecivirus* or cegacovirus* or centapoxvirus* or cervidpoxvirus* or charlievirus* or

charybnivirus* or che8virus* or che9cvirus* or cheravirus* or chibartevirus* or chipapillomavirus* or chipolycivirus* or chivirus* or chlamydiamicrovirus* or chloriridovirus* or chlorovirus* or chordovirus* or chrysovirus* or cilevirus* or circovirus* or citrivirus* or cjw1virus* or clavavirus* or closterovirus* or coccolithovirus* or colacovirus* or coltivirus* or comovirus* or coopervirus* or copiparvovirus* or corndogvirus* or coronavirus* or corticovirus* or cosavirus* or cosmacovirus* or cp1virus* or cp220virus* or cp51virus* or cp8virus* or cr3virus* or cradenivirus* or crinivirus* or cripavirus* or crocodylidpoxvirus* or crohivirus* or cronusvirus* or crustavirus* or cryspovirus* or cucumovirus* or cuevavirus* or curiovirus* or curtovirus* or cvm10virus* or cyclovirus* or cypovirus* or cyprinivirus* or cystovirus* or cytomegalovirus* or cytorhabdovirus* or d3112virus* or d3virus* or debiartevirus* or decacovirus* or decronivirus* or decurrovirus* or deltaarterivirus* or 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huchismacovirus* or hudivirus* or hudovirus* or hunnivirus* or hupolycivirus* or hypovirus* or hytrovirus* or ichnovirus* or ichtadenovirus* or ictalurivirus* or idaeovirus* or idnoreovirus* or iflavirus* or igacovirus* or ilarvirus* or iltovirus* or infratovirus* or inovirus* or inshuvirus* or invictavirus* or iotaarterivirus* or iotapapillomavirus* or iotatorquevirus* or ipomovirus* or iridovirus* or isavirus* or iteradensovirus* or jd18virus* or jenstvirus* or jerseyvirus* or jimmervirus* or jonvirus* or js98virus* or jwalphavirus* or jwxvirus* or k1gvirus* or kadilivirus* or kaftartevirus* or kappaarterivirus* or kappapapillomavirus* or kappatorquevirus* or karsalivirus* or kayvirus* or kelleziovirus* or kf1virus* or kieseladnavirus* or kigiartevirus* or kobuvirus* or korravirus* or kp15virus* or kp32virus* or kp34virus* or kp36virus* or kpp10virus* or kpp25virus* or kunsagivirus* or l5virus* or labyrnavirus* or lagovirus* or lambdaarterivirus* or lambdapapillomavirus* or lambdatorquevirus* or lambdavirus* or laroyevirus* or lausannevirus* or ledantevirus* or leishmaniavirus* or lentivirus* or leporipoxvirus* or letovirus* or levivirus* or liefievirus* or likavirus* or limestonevirus* or limnipivirus* or lincruvirus* or lineavirus* or lit1virus* or lmd1virus* or loanvirus* or lolavirus* or luchacovirus* or luteovirus* or luz24virus* or luz7virus* or lymphocryptovirus* or lymphocystivirus* or lyssavirus* or m12virus* or macanavirus* or macavirus* or machinavirus* or machlomovirus* or macluravirus* or macronovirus* or maculavirus* or mamastrovirus* or mammarenavirus* or mandarivirus* or marafivirus* or marburgvirus* or mardivirus* or marnavirus* or marseillevirus* or marthavirus* or marvinvirus* or mastadenovirus* or mastrevirus* or mavirus* or megabirnavirus* or megalocytivirus* or megrivirus* or menolivirus* or merbecovirus* or metapneumovirus* or metavirus* or milecovirus* or mimivirus* or mimoreovirus* or minacovirus* or minunacovirus* or mischivirus* or mitartevirus* or mitovirus* or mivirus* or mobatvirus* or mobuvirus* or molluscipoxvirus* or mooglevirus* or moonvirus* or moordecovirus* or morbillivirus* or mosavirus* or msw3virus* or muarterivirus* or mudcatvirus* or mupapillomavirus* or muromegalovirus* or muscavirus* or muvirus* or mycoflexivirus* or mycoreovirus* or myohalovirus* or myotacovirus* or n15virus* or n4virus* or namcalivirus* or nanovirus* or narnavirus* or nebovirus* or nepovirus* or nidovirus* or nit1virus* or nobecovirus* or nona33virus* or nonagvirus* or nonanavirus* or norovirus* or novirhabdovirus* or np1virus* or nucleopolyhedrovirus* or nucleorhabdovirus* or nudivirus* or nupapillomavirus* or nyavirus* or nyctacovirus* or nyfulvavirus* or nymphadoravirus* or ofalivirus* or okavirus* or oleavirus* or omegapapillomavirus* or omegatetravirus* or omegavirus* or omikronpapillomavirus* or oncotshavirus* or oncovirus* or ophiovirus* or orbivirus* or orinovirus* or orivirus* or orthobornavirus* or orthobunyavirus* 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rhizidiovirus* or rhopapillomavirus* or robigovirus* or rogue1virus* or rosadnavirus* or rosavirus* or rosebushvirus* or roseolovirus* or rotavirus* or roymovirus* or rsl2virus* or rslunavirus* or rtpvirus* or rubivirus* or rubulavirus* or rudivirus* or rymovirus* or s16virus* or sadwavirus* or saetivirus* or sakobuvirus* or salivirus* or salmonivirus* or salterprovirus* or sap6virus* or sapelovirus* or sapovirus* or sarbecovirus* or schizot4virus* or sclerodarnavirus* or sclerotimonavirus* or scutavirus* or se1virus* or seadornavirus* or sectovirus* or secunda5virus* or semotivirus* or send513virus* or senecavirus* or senegalvirus* or sep1virus* or septima3virus* or sequivirus* or setracovirus* or seuratvirus* or sextaecvirus* or sfi11virus* or sfi21dt1virus* or shanbavirus* or shangavirus* or shaspivirus* or sheartevirus* or siadenovirus* or sicinivirus* or sigmapapillomavirus* or sigmavirus* or silviavirus* or simiispumavirus* or simplexvirus* or sinaivirus* or sirevirus* or sitaravirus* or sk1virus* or slashvirus* or smoothievirus* or sobemovirus* or socyvirus* or solendovirus* or sopolycivirus* or soupsvirus* or soymovirus* or sp18virus* or sp31virus*

or sp58virus* or sp6virus* or spbetavirus* or spiromicrovirus* or spn3virus* or spo1virus* or sprivivirus* or sputnikvirus* or sripuvirus* or ssp2virus* or striwavirus* or suipoxvirus* or sunshinevirus* or suspvirus* or svunavirus* or t1virus* or t4virus* or t5virus* or t7virus* or tankvirus* or tapwovirus* or taupapillomavirus* or tegacovirus* or tenuivirus* or tepovirus* or teschovirus* or tetraparvovirus* or tg1virus* or thetaarterivirus* or thetapapillomavirus* or thetatorquevirus* or thogotovirus* or thottimvirus* or tibrovirus* or tilapinevirus* or tin2virus* or tipravirus* or tiruvirus* or titanvirus* or tl2011virus* or tlsvirus* or tm4virus* or tobamovirus* or tobravirus* or tombusvirus* or topocuvirus* or torchivirus* or torovirus* or torradovirus* or tospovirus* or totivirus* or toursvirus* or tp21virus* or tp84virus* or treisdeltapapillomavirus* or treisepsilonpapillomavirus* or treisetapapillomavirus* or treisiotapapillomavirus* or treiskappapapillomavirus* or treisthetapapillomavirus* or treiszetapapillomavirus* or tremovirus* or triatovirus* or triavirus* or trichomonasvirus* or trichovirus* or trigintaduovirus* or tritimovirus* or tsarbombavirus* or tungrovirus* or tunisvirus* or tupavirus* or turncurtovirus* or turrinivirus* or twortvirus* or tymovirus* or umbravirus* or una4virus* or una961virus* or upsilonpapillomavirus* or v5virus* or varicellovirus* or varicosavirus* or vegasvirus* or velarivirus* or vendettavirus* or vesiculovirus* or vesivirus* or vespertiliovirus* or vhmlvirus* or vi1virus* or victorivirus* or virtovirus* or virus* or vitivirus* or vp5virus* or waikavirus* or wbetavirus* or wenilivirus* or whispovirus* or wildcatvirus* or wizardvirus* or woesvirus* or wphvirus* or wubeivirus* or wuhivirus* or wumivirus* or xipapillomavirus* or xp10virus* or yatapoxvirus* or ydn12virus* or yingvirus* or yuavirus* or yuyuevirus* or zeavirus* or zetaarterivirus* or zetapapillomavirus* or zetatorquevirus*).mp.
11. ("2019 ncov" or "2019nCoV" or "covid 19" or "severe acute respiratory syndrome coronavirus 2" or "sars cov 2").mp.
12. or/7-11
13. 6 and 12
14. Ventilation/
15. Air Pollution, Indoor/
16. ((high-volume adj1 evacuat*) or HEPA).tw,kf.
17. ((high-volume adj3 (evacuat* or filter?)) or HEPA or HVE).tw,kf.
18. ventilat*.tw,kf.
19. air exchange.tw,kf.
20. filter?.tw,kf.
21. or/14-20
22. 13 and 21

Key area I

1. exp Stomatognathic Diseases/
2. exp Dentistry/
3. exp Oral Health/
4. exp Dental Facilities/
5. (dentist* or endodont* or orthodonti* or periodont* or prosthodont* or apicoectom* or gingivectom* or gingivoplast* or glossectom* or "mandibular advancement" or alveolectom* or alveoloplast* or vestibuloplast* or "root canal" or oral or oropharyng* or temporomandibular or TMJ or jaw or jaws or mandibular or maxillofacial or mandible* or maxilla* or "alveolar ridge" or dental or orthognathic or tooth or teeth or occlusion or malocclusion or mal-occlusion or odontolog* or tongue* or glossal or buccal or palatal or palate or palates or labial or lip or lips or gingiva* or gingiviti*).tw,kf.
6. or/1-5
7. exp Viruses/
8. exp Virus Diseases/
9. (viridae or COVID-19 or AIDS or HIV or ebola or zika or "west nile" or shingles or SARS or MERS or chickenpox or smallpox or Chikungunya or epstein-barr or erythema or exanthum or influenza? or flu or HFMD or "heartland virus" or HFRS or hepatitis or herpes or cmeasles or mumps or "nipah virus" or Poliomyelitis or yersiniosis or rubella or salmonellosis or rabies).tw,kf.
10. (aalivirus* or ab18virus* or abouovirus* or abyssovirus* or acadianvirus* or ag3virus* or agatevirus* or agrican357virus* or aichivirus* or albetovirus* or alefpapillomavirus* or alfamovirus* or allexivirus* or allolevivirus* or almendravirus* or alpha3microvirus* or alphaabyssovirus* or alphaarterivirus* or alphabaculovirus* or alphacarmotetravirus* or alphacarmovirus* or alphacoronavirus* or alphaendornavirus* or alphaentomopoxvirus* or alphafusellovirus* or alphaguttavirus* or alphaherpesvirus* or alphainfluenzavirus* or alphaletovirus* or alphamesonivirus* or alphamononivirus* or alphanecrovirus* or alphanodavirus* or alphanudivirus* or alphapapillomavirus* or alphapartitivirus* or alphapermutotetravirus* or alphapleolipovirus* or alphapolyomavirus* or alphaportoglobovirus* or alpharetrovirus* or alphasphaerolipovirus* or alphaspiravirus* or alphatectivirus* or alphatorquevirus* or alphatristromavirus* or alphaturrivirus* or alphavirus* or amalgavirus* or ambidensovirus* or amdoparvovirus* or amigovirus* or ampelovirus* or ampivirus* or ampobartevirus* or ampullavirus* or anatolevirus* or andecovirus* or andromedavirus* or anphevirus* or anulavirus* or ap22virus* or aparavirus* or aphthovirus* or aplyccavirus* or aquabirnavirus* or aquamavirus* or aquaparamyxovirus* or aquareovirus* or arlivirus* or arv1virus* or ascovirus* or asfivirus* or atadenovirus* or attisvirus* or aumaivirus* or aureusvirus* or aurivirus* or avastrovirus* or avenavirus* or aveparvovirus* or aviadenovirus* or avibirnavirus* or avihepadnavirus* or avihepatovirus* or avipoxvirus* or avisivirus* or avulavirus* or b4virus* or babuvirus* or bacillarnavirus* or badnavirus* or bafinivirus* or balbicanovirus* or banyangvirus* or barnavirus* or barnyardvirus* or bastillevirus* or batrachovirus* or baxtervirus* or bc431virus* or bcep22virus* or bcep78virus* or bcepmuvirus* or bdellomicrovirus* or becurtovirus* or begomovirus* or behecravirus* or beidivirus* or benyvirus* or berhavirus* or bernal13virus* or betaarterivirus* or betabaculovirus* or betacarmovirus* or betacoronavirus* or betaendornavirus* or betaentomopoxvirus* or betafusellovirus* or betaguttavirus* or betaherpesvirus* or betainfluenzavirus* or betalipothrixvirus* or betanecrovirus* or betanodavirus* or betanudivirus* or betapapillomavirus* or betapartitivirus* or betapleolipovirus* or betapolyomavirus* or betaretrovirus* or betasphaerolipovirus* or betatectivirus* or betatetravirus* or betatorquevirus* or beturrivirus* or bevemovirus* or bicaudavirus* or bidensovirus* or bignuzvirus* or biquartavirus* or biseptimavirus* or blosnavirus* or blunervirus* or bocaparvovirus* or bolenivirus* or bongovirus* or bopivirus* or bostovirus* or botrexvirus* or botybirnavirus* or bovismacovirus* or bovispumavirus* or bpp1virus* or bracovirus* or brambyvirus* or brevidensovirus* or bromovirus* or bronvirus* or brujitavirus* or buldecovirus* or buttersvirus* or bxz1virus* or bymovirus* or c2virus* or c5virus* or cadicivirus* or cafeteriavirus* or calicivirus* or camvirus* or capillovirus* or capripoxvirus* or capulavirus* or carbovirus* or cardiovirus* or cardoreovirus* or carlavirus* or casualivirus* or caulimovirus* or cavemovirus* or cba120virus* or cba181virus* or cba41virus* or cbastvirus* or cc31virus* or cd119virus* or cecivirus* or cegacovirus* or centapoxvirus* or cervidpoxvirus* or charlievirus* or charybnivirus* or che8virus* or che9cvirus* or cheravirus* or chibartevirus* or chipapillomavirus* or chipolycivirus* or chivirus* or chlamydiamicrovirus* or chloriridovirus* or chlorovirus* or chordovirus* or chrysovirus* or cilevirus* or circovirus* or citrivirus* or cjw1virus* or clavavirus* or closterovirus* or coccolithovirus* or colacovirus* or coltivirus* or comovirus* or coopervirus* or copiparvovirus* or corndogvirus* or coronavirus* or corticovirus* or cosavirus* or cosmacovirus* or cp1virus* or cp220virus* or cp51virus* or cp8virus* or cr3virus* or cradenivirus* or crinivirus* or cripavirus* or

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Missing from this document is having someone competent in engineering sciences give guidance regarding engineering infection controls. There are reasonable precautions that should have been taken. Aerosol should have been assumed until it was ruled out. This approach was not taken. Persons competent in engineering sciences are woefully lacking from these documents and this is a common trend in multiple jurisdictions examined and it is not an accident. Examine the documentation provided by the engineering groups and how they unlawfully attacked a trademark for using the word engineering when DSR Karis Consulting Inc. had lawful means to use it as a trademark and the complete silence from the same engineering bodies when it comes to murdering people. This document is evidence of crime.

Aerosol Generating Medical Procedures (AGMPs) and COVID-19

Disclaimer:
This *Quick Response Report* was published on May 14, 2020. Given the rapidly changing nature of the coronavirus pandemic, some of the references included in this report may quickly become out-of-date. We further caution readers that researchers at the Newfoundland & Labrador Centre for Applied Health Research are not experts on infectious diseases and are relaying work produced by others. This report has been produced quickly and it is not exhaustive, nor have the included studies been critically appraised.

Readers will note that some text below has been highlighted for emphasis.

Defining Aerosol Generating Medical Procedures

Original inquiry: What is the generally agreed upon definition for an AGMP? What procedures meet the definition of AGMP?

There does not appear to be a single official list of individual procedures that meet the definition of AGMP. Individual studies and reviews will define AGMP for their own purposes. Health authorities seem to provide non-exclusive lists of examples.

Centres for Disease Control (CDC). **Healthcare Infection Prevention and Control FAQs for COVID-19**. May 6, 2020 (LINK)

- "Which procedures are considered aerosol generating procedures in healthcare settings?"
  - "Development of a comprehensive list of AGPs for healthcare settings has not been possible, due to limitations in available data on which procedures may generate potentially infectious aerosols and the challenges in determining if reported transmissions during AGPs are due to aerosols or other exposures. There is neither expert consensus, nor sufficient supporting data, to create a definitive and comprehensive list of AGPs for healthcare settings."
  - References Tran et al. (2012) as source.

World Health Organization (WHO). **Infection prevention and control during health care for probable or confirmed cases of novel coronavirus (nCoV) infection**. May 6, 2013 (LINK)

- Appears to be "official" definition of AGP / AGMP
- "An aerosol-generating procedure is defined as any medical procedure that can induce the production of aerosols of various sizes, including small (< 5 mkm) particles."

Health Canada. **Infection Prevention and Control for COVID-19: Second Interim Guidance for Acute Healthcare Settings**. April 30, 2020 (LINK)

- Aerosol-generating medical procedures (AGMPs): "An AGMP is any procedure conducted on a patient that can induce production of aerosols of various sizes, including droplet nuclei. Examples include: Intubation and related procedures (e.g., manual ventilation, open endotracheal suctioning); Bronchoscopy; Sputum induction; Non-invasive positive pressure ventilation (CPAP, BiPAP)."

Royal College of Surgeons. **Good Practice for Surgeons and Surgical Teams**. April 3, 2020 (LINK)

- "Aerosol Generating Procedures (AGPs). The following procedures are currently considered to be potentially infectious AGPs for COVID-19:
    - Intubation, extubation and related procedures, e.g., manual ventilation and open suctioning of the respiratory tract (including the upper respiratory tract)
    - Tracheotomy/tracheostomy procedures (insertion/open suctioning/removal)
    - Bronchoscopy and upper ENT airway procedures that involve suctioning
    - Upper Gastrointestinal Endoscopy where there is open suctioning of the upper respiratory tract
    - Surgery and post mortem procedures involving high-speed devices
    - Some dental procedures (e.g., high speed drilling)
    - Non-invasive ventilation (NIV) e.g., Bi-level Positive Airway Pressure Ventilation (BiPAP) and Continuous Positive Airway Pressure Ventilation (CPAP)
    - High Frequency Oscillatory Ventilation (HFOV)
    - Induction of sputum
    - High flow nasal oxygen (HFNO)

Additional Sources

Norwegian Institute of Public Health. **Aerosol generating procedures in health care, and COVID-19**. March 2020 (LINK)

BC Provincial Infection Control Network (PICNet). **Orientation Program for Infection Control Professionals**. 2020 (LINK)

Straube (Review Protocol). **Categorizing aerosol-generating procedures (AGP)**. Expected date of completion: April 30, 2020 (LINK)

- "Which procedures are categorized as AGP in documents by different authors/agencies?"

Specific Procedures and their Risks for Viral Transmission

Original inquiry: Are "High Flow Nasal Cannula" or "High Flow Oxygen" considered an AGMP? Are there any procedures that societies have listed as AGMP (for example, colonoscopies, labour and delivery, hyperventilation for electroencephalograms) that can be said to have no increased risk of viral transmission for healthcare workers?

CDC. **Clinical Questions about COVID-19: Questions and Answers.** May 6, 2020 (LINK)

- Labour and delivery:
  - "When available, respirators (or facemasks if a respirator is not available), eye protection, gloves, and gowns should be used for the care of patients with known or suspected COVID-19 infection, including women who are pregnant."
  - "Based on limited data, forceful exhalation during the second stage of labor would not be expected to generate aerosols to the same extent as procedures more commonly considered to be aerosol generating... Forceful exhalation during the second stage of labor is not considered an aerosol-generating procedure for respirator prioritization during shortages over procedures more likely to generate higher concentrations of infectious respiratory aerosols."
- High-flow oxygen: "Based on limited data, high-flow oxygen use is not considered an aerosol-generating procedure for respirator prioritization during shortages over procedures more likely to generate higher concentrations of infectious respiratory aerosols… Patients with known or suspected COVID-19 should receive any interventions they would normally receive as standard of care."

Protection for Healthcare Workers

Original inquiry: At this point, is there any evidence that neck protection for a person performing an intubation reduces the risk of viral transmission? Are there AGMPs that can be converted to a non-AGMP by altering the set-up of the procedure (for example, non-invasive ventilation, bi-level positive airway pressure, continuous positive airway pressure)?

The following resources address protective measures for health service providers in the context of AGMPs and COVID-19. No sources were found that address neck protection for intubation specifically, but several do include mention of neck protection as a part of Power Air-Purifying Respirators (PAPRs).

Guidance

Alberta Health Services. **IPC Recommendations for Suspected or Confirmed COVID-19 Patients requiring Urgent or Emergent Surgery**. April 21, 2020 (LINK)

- Includes recommendations about: operating rooms, PPE, pre-operative protocols, induction and intubation, post-operative protocols, and references.

Alberta Health Services. **PPE for endoscopy procedures during COVID-19 pandemic**. April 25, 2020 (LINK)

- "Where possible, avoid endoscopy procedures for patients with confirmed or suspected COVID-19"
- "AHS IPC does not consider gastroscopy to be an AGMP based on current scientific evidence."

- "AHS IPC does not consider colonoscopy to be an AGMP based on current scientific evidence."

Alberta Health Services. **Respiratory Illness: Assessing the Need for Additional Precautions**. March 13, 2020 (LINK)

- List of Aerosol-Generating Medical Procedures: intubation and related procedures (e.g., manual ventilation, open endotracheal suctioning, extubation); cardiopulmonary resuscitation (CPR); Bi-level Positive Airway Pressure (e.g. BiPAP, CPAP); humidified high flow oxygen systems (e.g., ARVO, Optiflow); tracheostomy care; bronchoscopy; sputum induction; nebulized therapy/aerosolized medication administration; open respiratory/airway suctioning; high frequency oscillatory ventilation.
- The following procedures have not been shown to generate aerosols that increase transmission risk (includes but not limited to): Nasopharyngeal (NP) swabs; NP aspirates; oral suctioning; chest physiotherapy. Use the PCRA to determine appropriate PPE when performing these non-AGMP.
- Similar documents, though the lists of AGMPs differ:
    - Winnipeg Regional Health Authority. **Aerosol Generating Medical Procedures**. July, 2017 (LINK)
    - Vancouver Coastal Health. **IPAC BEST PRACTICES GUIDELINE Aerosol Generating Medical Procedures**. March 23, 2020 (LINK)
    - Australian and New Zealand Intensive Care Society (ANZICS). **COVID-19 Guidelines**. March 16, 2020 (LINK)

Additional Sources

- Canadian Anesthesiologists' Society. **COVID-19 Recommendations during Airway Manipulation**. March 21, 2020 (LINK)

- CSO-NHS Taskforce. **Recommendations from the CSO-HNS taskforce on performance of tracheotomy during the COVID-19 pandemic. April 27, 2020** (LINK)

- ICM Anaesthesia COVID-19 (UK). **COVID-19 airway management principles**. March 19, 2020 (LINK)

Multiple National Partners (UK). **Consensus guidelines for managing the airway in children with COVID-19**. April 1, 2020 (LINK)

- Highlighting differences in practice from adult guidelines

Systematic Reviews

Chiesa-Estomba et al. medRXiv. **Systematic review of international guidelines for tracheostomy in COVID-19 patients**. April 29, 2020 (LINK)

- "This review of international guidelines for tracheostomy in COVID-19 infected patients, aiming to summarize in a systematic way the available recommendations from 18 guidelines from all over the world."

Cochrane Systematic Review. **Behavioural interventions to promote workers' use of respiratory protective equipment**. December 7, 2016 (LINK)

- "Objectives: To assess the effects of any behavioural intervention either directed at organisations or at individual workers on observed or self-reported RPE use in workers when compared to no intervention or an alternative intervention."
- "There is very low quality evidence that behavioural interventions, namely education and training, do not have a considerable effect on the frequency or correctness of RPE use in workers."

Cochrane Special Collection. **Coronavirus (COVID-19): regional anaesthesia to reduce drug use in anaesthesia and avoid aerosol generation**. March 23, 2020 (LINK)

- A collection of Cochrane reviews and overviews related to anaesthetic strategies to reduce exposure to aerosol generation.
- Sub-sections include:
    - Regional anaesthesia compared with conventional analgesic techniques
    - How best to perform regional anaesthesia and which local anaesthetics and adjuncts to use
    - Orthopaedic surgery
    - General surgery and vascular surgery
    - Cardiothoracic surgery

Cochrane Systematic Review. **Personal protective equipment for preventing highly infectious diseases due to exposure to contaminated body fluids in healthcare staff**. April 15, 2020 (LINK)

- "Objectives: To evaluate which type of full-body PPE and which method of donning or doffing PPE have the least risk of contamination or infection for HCW, and which training methods increase compliance with PPE protocols."
- "We found low- to very low-certainty evidence that covering more parts of the body leads to better protection but usually comes at the cost of more difficult donning or doffing and less user comfort, and may therefore even lead to more contamination... Face-to-face training in PPE use may reduce errors more than folder-based training."

Other Reviews

Archer & Ungern-Sternberg. **Pediatric anesthetic implications of COVID-19—A review of current literature**. Pediatric Anesthesia, April 19, 2020 (LINK)

CADTH. **Masks During Aerosol-Generating ENT Procedures: Clinical Effectiveness and Guidelines**. March, 2020 (LINK)

- "No relevant studies were identified regarding the clinical effectiveness of m asks for clinicians and healthcare workers exposed to bioaerosols or infectious agents during ENT procedures. In addition, no relevant evidence-based guidelines were identified regarding the selection of respiratory protection during ENT procedures for clinicians and health care workers."

Cook . **Personal protective equipment during the coronavirus disease (COVID) 2019 pandemic – a narrative review**. Anaesthesia, April 4, 2020 (LINK)

- "Recommendations from international organisations are broadly consistent, but equipment use is not. Only airborne precautions include a fitted high-filtration mask, and this should be reserved for aerosol generating procedures."

First 10 EM. **Aerosol Generating Procedures**. May 7, 2020 (LINK)

- Review of multiple procedures for evidence of increased risk of transmission to healthcare workers and evidence that they can be done safely with a reduced level of PPE.

Mick & Murphy. **Aerosol-generating otolaryngology procedures and the need for enhanced PPE during the COVID-19 pandemic: a literature review**. Journal of Otolaryngology - Head & Neck Surgery, May 11, 2020 (LINK)

NSW Health (Australia). **Continuous Positive Airway Pressure (CPAP) machines**. April 10, 2020 (LINK)

- "There is limited evidence on the topic of CPAP and/or BiPAP as aerosol generating procedures. Some publications describe CPAP and BiPAP as potential aerosol-generating procedures involved in nosocomial virus transmission. A systematic review found non-significant results for transmission for CPAP."

NSW Health (Australia). **Laparoscopy during COVID-19**. March 25, 2020 (LINK)

- "Advice from governing and academic bodies regarding laparoscopy was found in the grey literature… The Royal College of Surgeons of Edinburgh outline in relation to COVID-19, laparoscopy should generally not be used as it risks aerosol formation and infection."

NSW Health (Australia). **Spirometry and transmission risk**. April 6, 2020 (LINK)

- "There is very little and low level evidence. One non-human experimental article suggests that a significant transfer of aerosolised organisms does not occur during routine pulmonary function testing; as long as an interval of 5 minutes or more is allowed between tests."

Ontario Health Quality. **Powered Air Purifying Respirators (PAPRs) as an Alternative to N95Respirators in a HealthCare Setting: Supplemental Information**. April 7, 2020 (LINK)

- Review of national and international guidelines, as well as published research literature.

Whittle et al. **Respiratory support for adult patients with COVID-19**. JACEP, April 2, 2020 (LINK)

- "Summary recommendations include: (1) Avoid nebulized therapies. Consider metered dose inhaler alternatives. (2) Provide supplemental oxygen following usual treatment principles for hypoxic respiratory failure. Maintain awareness of the aerosol-generating potential of all devices, including nasal cannulas, simple face masks, and venturi masks. Use non-rebreather masks when possible. Be attentive to aerosol generation and the use

of personal protective equipment. (3) High flow nasal oxygen is preferred for patients with higher oxygen support requirements. Non-invasive positive pressure ventilation may be associated with higher risk of nosocomial transmission. If used, measures special precautions should be used reduce aerosol formation. (4) Early intubation/mechanical ventilation may be prudent for patients deemed likely to progress to critical illness, multi-organ failure, or acute respiratory distress syndrome (ARDS)."

Thamboo et al . **Clinical evidence based review and recommendations of aerosol generating medical procedures in otolaryngology – head and neck surgery during the COVID-19 pandemic**. Journal of Otolaryngology - Head & Neck Surgery, May 6, 2020 (LINK)

- "Direct evidence indicates that CO2 laser ablation, the use of high-speed rotating devices, electrocautery and endotracheal suctioning are AGMPs. Indirect evidence indicates that tracheostomy should be considered as potential AGMPs. Nasal endoscopy and nasal packing/epistaxis management can result in droplet transmission, but it is unknown if these procedures also carry the risk of airborne transmission."

The following article is a preprint and has not been peer-reviewed. It reports new medical research that has yet to be evaluated and so should not be used to guide clinical practice.
Birgand et al. **Analysis of national and international guidelines on respiratory protection equipment for COVID-19 in healthcare settings**. medRXiv, April 29, 2020 (LINK)

- "The recommendation of respirators was universally recommended for aerosol generating procedures (AGP) across countries, although the type of respirators and what constituted an AGP was variable."

Expert Opinion

Medical Journal of Australia. **Consensus statement: Safe Airway Society principles of airway management and tracheal intubation specific to the COVID-19 adult patient group**. March 16, 2020 (LINK)

- Extensive list of recommendations, beyond the scope of our understanding to reliably summarize or quote.

Primary Research

Cordier et al . **Health workers' safety during tracheostomy in COVID-19 patients: Homemade protective screen**. Head & Neck, April 29, 2020 (LINK)

- "This installation is simple, easy, and fast to achieve and can be carried out with inexpensive material available in every hospital. This physical interface is an additional safety measure that prevents the direct projection of secretions or droplets."

Cubillos et al. **A multipurpose portable negative air flow isolation chamber for aerosol-generating procedures during the COVID-19 pandemic.** British Journal of Anaesthesia, April 27, 2020 (LINK)

- "We created a rigid cubic frame chamber that relies almost exclusively on materials available at hardware stores, which is then draped with a clear plastic bag."

- "Even though our results are preliminary and qualitative in nature, we demonstrate proof of concept for an additional physical barrier during aerosol-generating procedures."

Malik et al. **Maximising application of the Aerosol Box in protecting healthcare workers during the covid-19 pandemic**. Anaesthesia, April 29, 2020 (LINK)

- "The Aerosol Box was intended to protect healthcare workers performing aerosol generating procedures (AGPs), specifically tracheal intubation, by providing a physical barrier to droplet and/or aerosol exposure. An increased infection rate has been reported in healthcare workers internationally, particularly when the level of personal protective equipment (PPE) has been inadequate... The Aerosol Box… is re-usable after careful decontamination with an appropriate cleansing agent."

Soma et al. **Operative team checklist for aerosol generating procedures to minimise exposure of healthcare workers to SARS-CoV-2**. International Journal of Pediatric Otorhinolaryngology, July 2020 (LINK)

- "An 8 step operative team checklist is provided describing details for the immediate pre-operative, intra-operative and post-operative journey of the patient to encourage healthcare workers to reflect upon and modify usual practice during AGP to mitigate exposure to SARS-CoV-2."

Thompson et al. **Influenza Aerosols in UK Hospitals during the H1N1 (2009) Pandemic – The Risk of Aerosol Generation during Medical Procedures**. PLoS One, February 13, 2013 (LINK)

- Frequently referenced, seems to be a benchmark paper.
- "With our small sample size we found that AGPs do not significantly increase the probability of sampling an H1N1 (2009) positive aerosol (OR (95% CI) = 4.31 (0.83–22.5). Although the probability of detecting positive H1N1 (2009) positive aerosols when performing various AGPs on intensive care patients above the baseline rate (i.e. in the absence of AGPs) did not reach significance, there was a trend towards hierarchy of AGPs, placing bronchoscopy and respiratory and airway suctioning above baseline (background) values."

van Doremalen et al. **Aerosol and Surface Stability of SARS-CoV-2 as Compared with SARS-CoV-1**. NEJM, April 16, 2020 (LINK)

- "We found that the stability of SARS-CoV-2 was similar to that of SARS-CoV-1 under the experimental circumstances tested… Our results indicate that aerosol and fomite transmission of SARS-CoV-2 is plausible, since the virus can remain viable and infectious in aerosols for hours and on surfaces up to days (depending on the inoculum shed)."

Workman et al. **Endonasal instrumentation and aerosolization risk in the era of COVID-19: simulation, literature review, and proposed mitigation strategies**. International Forum of Allergy & Rhinology, April 3, 2020 (LINK)

- "We confirm that aerosolization presents a risk to the endonasal skull base surgeon. In the outpatient setting, use of a barrier significantly reduces aerosol spread. Cold surgical

instrumentation and microdebrider use pose significantly less aerosolization risk than a high-speed drill. Procedures requiring drill use should carry a special designation as an "Aerosol Generating Surgery" to convey this unique risk, and support the need for protective PPE."

The following articles are preprints and have not been peer-reviewed. They report new medical research that has yet to be evaluated and so should not be used to guide clinical practice.

- Brar et al. medRXiv. **St George's COVID shield for use by ENT surgeons performing tracheostomies**. May 11, 2020 (LINK)
- Chahal et al. medRXiv. **A Rapidly Deployable Negative Pressure Enclosure for Aerosol-Generating Medical Procedures**. April 21, 2020 (LINK)
- Fears et al. medRXiv. **Comparative dynamic aerosol efficiencies of three emergent coronaviruses and the unusual persistence of SARS-CoV-2 in aerosol suspensions.** April 28, 2020 (LINK)
- Iwashyna et al. medRXiv. **Variation in Aerosol Production Across Oxygen Delivery Devices in Spontaneously Breathing Human Subjects**. April 20, 2020 (LINK)
- Matava et al. medRXiv. **Clear plastic drapes may be effective at limiting aerosolization and droplet spray during extubation: implications for COVID-19**. March 30, 2020 (LINK)

Transmission and Infection

Original Inquiry: In SARS-CoV-1 and H1N1, what were the rates of healthcare worker infection after performing specific AGMPs? What are the rates of healthcare worker infection with COVID-19 after performing AGMPs in the current pandemic? What is the current state of research regarding whether COVID-19 is a droplet vs. airborne spread illness?

Systematic Reviews

Health Technology Assessment Unit, University of Calgary. **Transmission of Acute Respiratory Infections During Aerosol Generating Medical Procedures**. April 8, 2020 (LINK)

- Update of 2011 CADTH Systematic Review (see below)
- "Both additional studies concluded that the performance of AGMPs significantly increased risk of ARI transmission to HCWs. Analysis by Kuster et al. (2013) suggests that the provision of assistance for AGMPs also carries risk of transmission."
- "The 2011 CADTH report appears to find no pattern to the procedures that are significantly associated with risk of transmission to healthcare workers"
- "Like the 2011 CADTH report, this update finds the presence of a significant research gap. Moreover, the generalizability of these findings to the current COVID-19 outbreak is unclear."

- Related document: CADTH. **Aerosol-Generating Procedures and Risk of Transmission of Acute Respiratory Infections: A Systematic Review**. November, 2011 (LINK)
    - "Procedures that are believed to generate aerosols and droplets as a source of respiratory pathogens include positive pressure ventilation (bi-level positive airway pressure [BiPAP] and continuous positive airway pressure [CPAP]), endotracheal intubation, airway suction, high-frequency oscillatory ventilation, tracheostomy, chest physiotherapy, nebulizer treatment, sputum induction, and bronchoscopy."
    - See Table 1 for odds ratios for different procedures (pp 7-8), figures 1-2 for meta-analysis results (pp 9-10)
    - "Our findings suggest that some procedures potentially capable of generating aerosols have been associated with increased risk of SARS transmission to HCWs or were a risk factor for transmission, with the most consistent association across multiple studies identified with tracheal intubation."
    - "These findings must be interpreted in the context of the very low quality of the studies"

Methodology

Newfoundland and Labrador Centre for Applied Health Research (NLCAHR) COVID-19 Quick Response reports are initiated by, and shared with, our partners in the provincial health system, including the four Regional Health Authorities, the Departments of Health and Community Services and Children, Seniors and Social Development, and public health officials.

NLCAHR staff work with topic submitters to clarify the research question. We then search for related systematic reviews, meta-analyses, other reviews, interim and other guidance statements, primary research, expert opinion and health and science reporting.

We use several search strategies, with a focus on the following databases:

- Alberta Health Services
- CADTH
- Canadian Pharmacists Association
- Campbell Collaboration
- Cochrane Collaboration
- Centre for Disease Control
- Centre for Evidence Based Medicine
- Evidence for Policy and Practice Information and Co-ordinating Centre
- European Centre for Disease Prevention and Control
- Health Canada
- HIQA (Ireland)
- Joanna Briggs Institute
- MedRxiv
- National Collaborating Centres on Methods and Tools (NCCMT)
- National Institutes of Health
- National Institute of Allergy and Infectious Diseases
- National Library of Medicine
- Public Health Agency of Canada
- Trip Database
- World Health Organization

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Laboratory Escapes and "Self-fulfilling prophecy" Epidemics

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February 17, 2014

Introduction

The danger to world or regional public health from the escape from microbiology laboratories of pathogens capable of causing pandemics, or Potentially Pandemic Pathogens (PPPs) has been the subject of considerable discussion[1,2,3,4] including mathematical modeling of the probability and impact of such escapes[5]. The risk of such releases has generally been determined from estimates of laboratory infections that are often incomplete, except for the recent 2013 Centers for Disease Control (CDC) report[6], which is a significant source of recent data on escapes from undetected and unreported laboratory-acquired infections (LAIs).

This paper presents an historical review of outbreaks of PPPs or similarly transmissible pathogens that occurred from presumably well-funded and supervised nationally supported laboratories. It should be emphasized that these examples are only the "tip of the iceberg" because they represent laboratory accidents that have actually caused illness outside of the laboratory in the general public environment. The list of laboratory workers who have contracted potentially contagious infections in microbiology labs but did not start community outbreaks is much, much longer. The examples here are not "near misses;" these escapes caused real-world outbreaks.

Methods of pathogen identification

Modern genetic analysis allows pathogens to be identified, and given a sufficient catalog of isolates of the same pathogen, it is possible to determine if two specimens are identical or very closely related. Because all pathogens that are circulating in the environment show genetic changes over time, one can date the time the pathogen circulated. For instance, for 20th century human and swine influenza viruses beginning in the 1930s, one can generally place a virus to a particular year. With modern rapid genomic analysis outbreaks can be traced with considerable accuracy: for instance the 2009 pandemic pH1N1 influenza outbreak has been analyzed with confidence limits of branchpoints in its first wave defined within days or weeks, and individual transmission chains can be identified[7].

Example #1: British smallpox escapes, 1966, 1972, 1978

The WHO's successful effort to eradicate natural transmission of smallpox in the 1970s highlighted the risk that virology laboratories posed as a source of epidemics. This

was clearly demonstrated in the United Kingdom, where from 1963-1978 only 4 cases of smallpox (with no deaths) were reported from smallpox endemic areas, while during the same period at least 80 cases and 3 deaths were the result of three separate escapes of the smallpox virus from two different accredited smallpox laboratories.[8] Much of the current policy and practice in biosafety and biocontainment of dangerous pathogens can be traced to the political and professional reaction to these outbreaks.

The UK became a sensitive test system for smallpox laboratory escapes because it ended compulsory smallpox vaccination in 1946. Public sentiment in the UK had always included significant resistance to and apathy towards vaccination, and so by the mid 1960s and through the 1970s a large proportion of children and young adults had never been vaccinated, and many older persons were never re-vaccinated after initial childhood or military vaccinations. Thus the protective herd immunity in the general public, which earlier rendered impotent any laboratory escapes, disappeared. At the same time, the considerable volume of travel and immigration from smallpox endemic areas of Africa and the Indian subcontinent meant that surveillance for imported smallpox cases was required. UK maintained several smallpox laboratories at medical schools for both research and to support clinical diagnosis.

The first laboratory outbreak to be recognized began in March 1972, in a 23 year old laboratory assistant at the London School of Hygiene and Tropical Medicine, who had observed harvesting of live smallpox virus from eggs. This had been done on an open bench, as was routine, the laboratory having no isolation cabinets at that time. Before she was placed in isolation, she infected two visitors to a patient in an adjacent bed, both of whom died. They in turn infected a nurse, who survived[9].

The recognition of this laboratory escape resulted in several investigations, which led to the establishment of guidelines for laboratories handling smallpox and other dangerous pathogens. These recommendations included handling dangerous pathogens in biological safety cabinets only in certain dedicated rooms by specifically trained and designated personnel. Also guidelines were issued for isolation with dedicated gowns and gloves, and the establishment of proper ventilation facilities to maintain negative pressure in these rooms and cabinets. These recommendations are the direct precursors to the current Biosafety Laboratory (BSL) level protocols.

By 1977 the natural chain of smallpox transmission had been interrupted, and the WHO was in the process of reducing the number of laboratories holding smallpox virus. In August of 1978 a 40 year old medical photographer at Birmingham Medical School developed smallpox, and died. She infected her mother, who survived. She worked in a studio and darkroom that was immediately above the smallpox laboratory at Birmingham Medical School. Investigation revealed that although the long established laboratory had been inspected and approved to handle smallpox virus, it did not have sufficient facilities to meet the new biocontainment requirements, and was scheduled to be decommissioned at the end of 1978. Moreover, work on smallpox had accelerated substantially in order to complete existing projects before the closing, and work with smallpox was performed by laboratory personnel who did not receive appropriate training and supervision, and

appropriate isolation practices were frequently violated. The most likely route of exposure of the Medical Photographer was by transport of infectious aerosols generated by a centrifuge through building ventilation ducts that were improperly sealed and allowed aerosols to be delivered to one of the Photographer's working spaces. Laboratory notebooks and the photographer's work logs indicated that the strain infecting the photographer was handled in the laboratory on the same days that the photographer worked in the potentially contaminated workspace, on dates consistent with the photographer's calculated exposure date. Dr Henry Bedson, a world renowned smallpox investigator who was responsible for the Birmingham laboratory, committed suicide as a result of the outbreak (Shooter 1980).

The 1978 investigation re-examined a 1966 smallpox outbreak, which in retrospect was strikingly similar to the 1978 outbreak. The earliest case identified in 1966 was in a medical photographer who worked at Birmingham Medical School in the same facility as the 1978 case. This outbreak was caused by a low-virulence strain of smallpox (variola minor), and it caused at least 72 cases of smallpox from February to August 1966, spread through the midlands of Britain, and Wales. The vast majority of cases were in unvaccinated children or young adults. There were no deaths. Retrospective review again revealed variola minor had been manipulated in the smallpox laboratory at a time appropriate to cause the infection in the photographer working a floor above.

Example #2: The "re-emergence" of H1N1 human influenza in 1977.

Human influenza H1N1 viruses appeared with the 1918 pandemic, and persisted, slowing accumulating small changes in its genome (with a major change in 1947), until the H2N2 "Asian" flu appeared in 1957, causing a worldwide pandemic. H1N1 influenza virus then apparently became extinct, and was not isolated for 20 years. In 1969 the "Hong Kong" H3N2 virus replaced the H2N2 virus, and is still circulating.

In September 1977 an H1N1 influenza virus was isolated from human infections in the Far East region of the Soviet Union, and in early 1978 the Chinese reported they had isolated H1N1 virus in May of 1977 in northeast China adjacent to the Soviet outbreak[10][11]. Using the early genetic tools available at the time, the 1977 H1N1 virus was found to be closely related to H1N1 human influenza viruses circulating in 1949-1950, but not to those circulating earlier or later[12, 13].

The 1977 H1N1 flu virus rapidly spread worldwide, in a pandemic that was restricted largely to people under ~ 21 years of age. Older persons had been exposed to related H1N1 viruses prior to 1957, and carried substantial immunity. Mercifully, the "re-emergent" H1N1 virus was not very virulent. Although illness was widespread, affecting 20-70% of those under 20 years of age in school or military camp outbreaks in the first year[14], deaths were few. Many asymptomatic infections were detected by serology (Kung 1978).

The appearance of this "time-traveling throwback" puzzled virologists, because no similar examples had previously been identified in influenza or other similar viruses. Initially escape of a virus kept in storage from c1950 from a virology lab was discussed, but such a laboratory accident was denied by Chinese and Soviet virologists (Kung 1978, Beveridge 1978). Western virologists quietly let the matter of a laboratory escape origin for the 1977 H1N1 virus drop from discussion, out of an abundance of scientific caution, and also out of an eagerness not to offend the Russian and Chinese scientists, whose early gestures of cooperation in worldwide influenza surveillance system were very important to foster, because such cooperation would allow tracking influenza globally.

Discussions of the origins of the 1977 H1N1 gave rise to hypotheses of natural "biological stasis" or viral latency in an undefined animal. Experimental investigations of possible transmission of human H1N1 viruses in avians were pursued, but with minimal success and no demonstration of persistent avian transmission[15], nor were human viruses identified in avians in very extensive subsequent surveys. The ambiguous term "frozen evolution" was coined, allowing for the freezing to be biologically functional, metaphorical, refrigerative, or natural.

A 2006 paper[16] claimed to have isolated H1N1 influenza virus RNA from ice and meltwater from Siberian lakes that were frequented by migratory birds. Since migratory birds naturally carry and shed a wide variety of influenza viruses, and since year to year variations in the amount of thawing of lake ice might allow influenza viruses shed from the migratory birds to remain physically frozen for a number of years, the paper stated this might be the mechanism for the re-emergence of the 1977 H1N1 flu. It emphasized the 1977 H1N1 link because the RNA sequences it reported isolating from the lakes were closely related to sequences of three H1N1 reference viruses that it characterized as being of avian origin that circulated in the late 1960s.

Problems soon arose with this paper, however. The authors issued a correction[17] in 2007 indicating the H1N1 reference strains originally characterized as avian and from the 1960s were in fact of human origin, and dated from the 1930s. A paper highly critical of the 2006 Siberian Lake paper was published in 2008[18], presenting strong evidence that the reported isolation of influenza RNA from nature was the result of contamination in the laboratory by the standard reference strain of human H1N1 virus (isolated in 1933) that was used as a positive control in that laboratory.

Presently, with detailed sophisticated genomic analysis available, and with 32 years of circulation of the 1977 H1N1 virus available for study, no evidence of natural genomic stasis has been identified. It has become clear that its appearance in 1977 was almost certainly due to escape from a virology lab of a virus sample that had been frozen since c1950. Only since ~ 2008 have virologists actually begun to make the suggestion of a probable laboratory release in scientific papers: "The reemergence in 1977 is unexplained and probably represents reintroduction to humans from a laboratory source[19]," and "…little A/H1N1 evolution is evident over the twenty-year period of the virus's global disappearance, supporting earlier suggestions that this subtype was most likely accidentally reintroduced into human circulation from a laboratory environment[20]."

It should be noted that this paper calculates the 1977 H1N1 virus had been circulating for ~ 1year before it was reported, so that geographic origin cannot be stated with certainty.

Only since 2009-2010 did major papers begin to state directly the 1977 emergence of H1N1 influenza was a laboratory related release: "The most famous case of a released laboratory strain is the re-emergent H1N1 influenza A virus which was first observed in China in May of 1977 and in Russia shortly thereafter[21]." The paper made this statement in part because the continued "agnostic" approach to the 1977 re-emergence introduced unacceptable errors in calculating the genomic divergence dates for influenza virus strains.

Public awareness of the 1977 H1N1 pandemic and its likely laboratory origins has been virtually absent. Virologists and public health officials with the appropriate sophistication were quickly aware that a laboratory release was the most likely origin, but they were content not to publicize this, aware that such embarrassing allegations would likely end the then nascent cooperation of Russian and Chinese virologists, which was vital to worldwide influenza surveillance. An abundance of caution in making such suggestions was also in their own self-interest. The 1976 "swine flu" alarm and subsequent immunization program that proved to be unneeded caused 532 cases of Guillain-Barre syndrome and 32 deaths. It was widely considered a misadventure, and had severely damaged the public and political credibility of the virology and public health communities. An acknowledgement of a pandemic originating from their laboratories would have only worsened it. The most plausible reason for a Chinese or Russian laboratory to thaw out and begin growing a c1950 H1N1 virus in 1976-77 was as a response to the US 1976 "swine flu" program, which resulted in a program to immunize the entire US population against H1N1 influenza virus. It was clearly a rational response for other countries with virology capabilities to explore making their own H1N1 vaccines. Thawing available frozen stocks of virus was necessary, because H1N1 was no longer circulating. Modern commentators have begun to articulate this connection between the 1976 Swine flu immunization program and the 1977 H1N1 re-emergence:

"Perhaps an even more serious consequence [of the 1976 swine flu episode] *was the accidental release of human-adapted influenza A (H1N1) virus from a research study, with subsequent resurrection and global spread of this previously extinct virus, leading to what could be regarded as a 'self-fulfilling prophecy' epidemic."*(Zimmer 2009)

The speculation that the 1977 release may have been related to H1N1 vaccine research is supported by the observation that in the initial outbreaks in China, nine of the ten viral isolates expressed "temperature sensitivity" (Kung 1978). Temperature sensitivity normally an uncommon trait, but one that was in the 1970s (and still is) a fundamental trait for making live attenuated influenza vaccines. Temperature sensitivity generally occurs only after a series of substantial laboratory manipulations and selections. Interestingly, further investigation indicated the circulating strains in 1977-78 were often comprised of mixed temperature-sensitive and normal components, and that temperature sensitivity apparently disappeared from the post-1978 H1N1 lineage rapidly[22]. Escape of a mid-protocol population of H1N1 virus undergoing laboratory selection for temperature

sensitive mutants would provide such a mixed population. In 1976-77 laboratory personnel in their late teens or early 20s would not have been exposed to pre-1957 H1N1 influenza viruses, and been susceptible to laboratory infections. The low severity of the 1977 pandemic might be in part due to the temperature sensitivity of the virus, a trait that limits virus replication in pulmonary tissues.

Example #3 Venezuelan Equine Encephalitis in 1995

Venezuelan Equine Encephalitis (VEE) is a viral disease transmitted by mosquitoes that intermittently erupts in regional or continental-scale outbreaks in the Western Hemisphere that involve equines (horses, donkeys and mules), termed epizootics, and often with concurrent epidemics among humans. The disease in equines creates high fever and severe neurological symptoms (colloquially termed "pesta loca" [crazy plague] in Spanish, or "blind staggers" in English) and a high, 19-83% fatality rate. In humans symptoms can vary from asymptomatic to a mild influenza-like febrile illness to a severe acute incapacitating febrile illness often with neurological symptoms (headache, depression, incoordination, mental clouding, epileptic seizures). Though its severity varies between outbreaks, VEE in humans may be fatal (up to ~5%) or, particularly in children, leave permanent neurological disability (epilepsy, paralysis, mental retardation) in 4 to 14% of clinical cases. In humans and equines miscarriages and stillbirths are increased.

Outbreaks typically occur in South America, though the 1969-71 continental-scale epizootic/epidemic reached from Central America through Mexico to Texas. VEE viruses are classified by their surface antigens, with the types causing large scale epizootics and epidemics being classed as type IAB and IC (termed epizootic strains), and types causing only sporadic human or equine disease in localized areas falling into types ID, IE, IF and II through VI (termed enzootic strains).

With modern genomic investigations available since the mid 1990s, programs of surveillance of mosquitoes and wildlife in regions at risk have discovered that in nature the enzootic VEE viruses are maintained by continuous transmission by mosquitoes in small mammals in the tropical and subtropical western hemisphere. The epizootic/epidemic type IAB and IC viruses appear suddenly without evidence of ongoing transmission during the long intervals between major outbreaks[23]. Moreover, genomic studies indicate that the epizootic types of VEE originate from the enzootic strains, specifically strain ID having given rise to the epizootic/epidemic types IAB and IC through a process of mutation[24]. VEE virus, like influenza virus shows rapid spontaneous changes in its genome, so that one can determine not only the genetic relatedness but also quantify the chronological distance separating different viral strains.

This is where the elegance of modern viral genomics becomes an embarrassment to virologists. It is clear from the genomics that while the enzootic type ID VEE virus can indeed mutate into the epizootic/epidemic types IAB and IC, it has, in fact, only done this on three occasions: ID to IAB some time in the 1930s and ID to IC in 1963 and 1992. There had been significant outbreaks of VEE every few years from the 1930s to the

1970s, however, and analysis showed that the numerous type IAB outbreaks were essentially matches to the original 1938 IAB VEE isolation that had been used in veterinary vaccines since the late 1930s. The veterinary vaccines had used inactivated (i.e. "killed") whole virulent viruses. VEE is notoriously hard to inactivate in the lab, and laboratory infections were common. It was clear that many batches of the veterinary VEE vaccines had not been completely inactivated, in which residual infective virus remained.

From 1938 to 1972, the VEE vaccine was causing most of the very outbreaks than it was called upon to control, a viscous cycle indeed, and another example of "self-fulfilling prophecy" outbreaks.

The recognition that inadequately inactivated vaccines caused most VEE outbreaks caused a change in the veterinary vaccine seed virus to an attenuated strain, and VEE outbreaks apparently ceased for 20 years, from 1973 to 1992[25]. Then, in 1992 a VEE outbreak in Venezuela occurred which proved to be a IC virus that was shown by genomic studies to have spontaneously arisen from enzootic type ID viruses circulating in the area where it arose, much like what had also occurred in the same area of Venezuela in 1962-64, when ID had mutated to a IC and caused an outbreak. The two IC VEE viruses, from 1962-64 and 1992, were distinct from each other, and arose from different genetic lines of ID viruses. The mystery of how epizootic VEE viruses arise naturally was apparently solved.

However, in 1995 a major VEE epizootic and epidemic hit Venezuela and Colombia, with a type IC virus also the cause. There were at least 10,000 human VEE cases with 11 deaths in Venezuela[26] and an estimated 75,000 human cases in Colombia, with 3,000 neurological complications and 300 deaths[27]. Household attack rates ran 13-57% and VEE virus was isolated from 10 stillborn or miscarried human fetuses[28].

Full genomic studies identified the 1995 virus as identical to an 1963 isolate with no sign that this virus had been circulating and the acquiring small genetic mutations indicative of replicating in hosts for 28 years. It was another case of "frozen evolution." But it could not be another case of an outbreak caused by a defective inactivated VEE vaccine, because the 1963 type IC VEE virus had never been used to make a vaccine. Possible trans-ovarian transmission in mosquito vectors had been explored previously with negative results[29]. Suspicion fell on an inadvertent release from a virology lab, either by an unrecognized infection of a lab worker or visitor, or escape of an infected laboratory animal or mosquito. VEE is easily transmitted by the aerosol route during laboratory manipulations, and laboratory infections with VEE are common in unvaccinated persons. In this outbreak there was considerable circumstantial evidence for such a laboratory escape. The 1963 type IC VEE virus was used in an "inactivated" form as a reagent for testing purposes, and this reagent preparation was tested and was found to contain live virus. This reagent was used in the virology laboratory in Venezuela located where the 1995 outbreak first appeared, which was in an area without ongoing circulation of type ID enzootic viruses related to the 1963/1995 IC virus, and an area removed from where de novo IC VEE outbreaks had previously originated. Moreover, a

report from this lab of an IC virus isolated from a surveillance mosquito pool in 1983 proved to be identical to the IC antigen strain, indicating a previous laboratory contamination event. The major scientific group working on VEE published a paper in 2001 stating the outbreak most likely was a laboratory escape, though this could not be proven[30].

The situation becomes less clear-cut, because in 2005 the same group reported small outbreaks from 2000 and 2003 with multiple isolations of IC virus from equids in Venezuela, this time one identical to the 1995 virus[31]. Yet another example of "frozen evolution" but during a period when the 1963/1995 IC virus was no longer used widely as a reagent preparation, and it originated in an area with ongoing enzootic transmission of VEE viruses. The VEE working group backed off its earlier conclusion that the 1995 outbreak was likely laboratory mediated, but was unable to propose a natural process for the genomic stasis they reported.

The VEE working group clearly has great expertise, and one must respect their judgment that the 2000 isolations are valid and laboratory circumstances are significantly different than in 1995, so that natural genomic stasis may indeed exist for VEE and is worthy of further investigation. Several proposed mechanisms for genomic stasis for VEE have been proposed and investigated. VEE circulates in a complex ecological pattern, with enzootic transmission involving a variety of mosquito and mammalian hosts, so various theories allowing genomic stasis have been proposed, such as latency in an arthropod line or mammalian host. These have been investigated with multi-year surveys in enzootic and post-epizootic areas, and no definite evidence of persistent epizootic strains have been found in arthropods or small mammals. In addition to the negative surveys, the short lifespans of small mammals and of the potential arthropod hosts preclude viral latency from explaining the 5 or 28 year hiatuses in the appearances of the "frozen" IC epizootic viruses, and no evidence has been found for latency in the longer-lived human and equine hosts. Transovarian "vertical" propagation of viruses in arthropods between mother and progeny has been described with some pathogens in arthropods, and this has been investigated experimentally with VEE in VEE vectors, without positive results[32].

It is clear that laboratory strains of VEE virus have a decades-long established habit of re-appearing showing "frozen evolution," and causing "self-fulfilling prophecy" epidemics. It is clear that escape of laboratory strains of this virus through faulty vaccines has occurred multiple times in the past. Strong circumstantial evidence exists for an inadvertent escape in 1995, and a re-emergence in 2000 is without explanation.

Example 4: SARS laboratory escapes outbreaks after the SARS epidemic

The SARS outbreak of 2002-2003 eventually spread to 29 countries, causing over 8,000 infections and at least 774 deaths. Because many cases were in hospital workers (1707, amounting to 21%), it had the potential to shut down health care services where it struck[33]. By imposing strict (sometimes draconian) quarantines on exposed persons and isolation of patients, and even more because of good fortune and dedicated (indeed,

heroic) medical personnel, it was contained and extinguished by July 2003. Quarantines, closure of factories and travel restrictions caused economic losses estimated at $ 40 billion worldwide, with an estimated 2.6% GDP loss in China, 1.05% GDP loss in Hong Kong, and 0.15% GDP loss to Canada[34].

SARS is particularly dangerous to handle in the laboratory because there is no vaccine, so all laboratory workers are susceptible. It can be transmitted through aerosol/droplet mechanisms: the very large (321 cases) Amoy Gardens outbreak in Hong Kong was traced to infectious aerosols created by turbulent flushing water flow in the sewer lines: this turbulent flow generated aerosols that were sucked back up into numerous adjacent apartments through dry floor drains by negative pressure generated by bathroom exhaust fans! (Abraham 2005).

Moreover, about 5% of SARS patients are "super-spreaders" who pass the infection to many (over 8) secondary cases[35]. One case (ZZ) spread SARS to directly to 28 persons during one 18-hour hospitalization, before transfer to another hospital, where he infected 93 additional hospital personnel. At a third hospital he infected 23 staff and 19 patients, and at a forth 20 hospital staff (Abraham 2005). Another super-spreader in Beijing infected at least 59 secondary cases. A super-spreader originally infected by ZZ in China visited Hong Kong but fell ill and remained in his hotel room, but managed to spread SARS to 10 secondary cases whose only associations were using a common elevator or hallway. These Hong Kong hotel exposures were international tourists, however, and were responsible for spreading SARS to Canada, Ireland, the US, Singapore, and Vietnam[36]. A 72-year old was already ill when he boarded flight CA112 from Hong Kong to Beijing on March 15, after having visited a niece ill with SARS in a Hong Kong hospital. Besides introducing another transmission chain in Beijing, on the two-hour flight he infected 20 other passengers and 2 flight attendants, who spread the disease to Mongolia, Singapore, Taiwan, and re-introduced new infection chains back into Hong Kong[37] (Abraham 2005).

The existence of SARS "super-spreaders" makes even a single laboratory infection into a potential pandemic.

SARS has not naturally recurred, but there have been six separate "escapes" from virology labs studying it: one each in Singapore and Taiwan, and in four distinct events at the same laboratory in Beijing.

The first escape was in Singapore in August 2003, in a 27-year-old virology graduate student at the National University of Singapore. He had not worked directly with SARS, but SARS was present in the virology laboratory where he worked with West Nile Virus (WNV). Investigation showed that his preparation of WNV was contaminated with SARS virus, and that this was the likely origin of his infection. After falling ill on Aug 26, he sought outpatient medical care in several venues, and was admitted to the hospital only on September 3. Fortunately he recovered and there were no secondary cases. Investigation revealed multiple shortcomings in infrastructure, training and observed procedures at the laboratory, and remedial actions were ordered[38].

The second escape was in Taiwan in December 2003, when a SARS research scientist fell ill on a return airflight after attending a medical meeting in Singapore Dec 7-10. Although he felt is illness was SARS, he remained at home for 5 days, unwilling to seek medical care because he dreaded bringing disgrace to himself and his institution. He was only persuaded to enter the hospital when his father threatened to commit suicide[39]. Preliminary investigation implicated a laboratory exposure due to an attempt to decontaminate a bag of leaking biological waste, perhaps without proper protection and against protocol the day before he left for Singapore[40]. His 74 contacts in Singapore were put under quarantine for ten days, but again, fortunately none developed SARS. An expert committee from WHO investigated the laboratory and its procedures, and recommended improvements[41].

This second outbreak further shook the virology communities in Asia, where many labs held and worked on SARS samples. On December 18, 2003 WHO released a new protocol for handling SARS specimens in the post-outbreak period, with special emphasis on reducing risk of and performing surveillance to detect laboratory infections[42]. Although this protocol was clearly created after the first (Singapore) escape, WHO chose to parse its words to avoid offending members. Perhaps distinguishing between a primary laboratory infection and secondary spread into a community "outbreak," it chose to treat the risk as hypothetical, stating in the introduction:

"The possibility that a SARS outbreak could occur following a laboratory accident is a risk of considerable importance, given the relatively large number of laboratories currently conducting research using the SARS-CoV or retaining specimens from SARS patients. These laboratories currently represent the greatest threat for renewed SARS-CoV transmission through accidental exposure associated with breaches in laboratory biosafety."

The hypothetical outbreak was not long in coming.

On April 22, 2004 China reported a suspected case of SARS in a 20-year-old nurse who fell ill April 5 in Beijing. The next day it reported she had nursed a 26-year-old female laboratory researcher who had fallen ill in March 25. Still ill, the researcher had traveled by train to her home in Anhui province where she was nursed by her mother, a physician, who fell ill on April 8 and died April 19. The researcher had worked at the Chinese National Institute of Virology (NIV) in Beijing, which is part of China's Center for Disease Control (CDC), and which was a major center of SARS research. The investigation at NIV also uncovered an unrelated laboratory infection in a 31-year old male laboratory researcher at the NIV who fell ill on 17 April[43]. The entire NIV institute was closed and all of its 200 employees placed in quarantine in a hotel. Subsequent investigation confirmed these first three cases as SARS, and eventually identified a total of nine cases, in three generations, including health care workers and their family contacts[44]. Neither of the two primary patients had worked with live SARS virus, and WHO investigators had "serious concerns" regarding biosafety procedures at the NIV[45].

Several Chinese and international groups investigated the outbreak at the NIV, and identified in retrospect two additional SARS laboratory infections at the NIV that had previously gone unrecognized and had begun in February 2004[46]. A joint China CDC and WHO investigation found many shortcomings in biosecurity at the NIV, and traced the specific cause of the outbreak to an inadequately inactivated preparation of SARS virus that was used in general (not biosecure) laboratory areas in the NIV, including the one in which the two primary cases worked. It had not been tested to confirm its safety after inactivation, as it should have been. The WHO also found more general shortcomings in the handling of live SARS virus and a lack of surveillance of laboratory personnel for laboratory infections.

Li Liming, director of the China CDC and his deputy directory, the director of the NIV and his deputy director, and the director of the division where the two index cases worked were removed from their positions and found guilty of negligence in overseeing safety at the institution[47]. The Chinese government also decided to move the China CDC campus from its position in a residential neighborhood to an area "more remote from downtown," and to allocate funds for more advanced laboratory equipment and infrastructure[48].

Interestingly, the virology community is still reticent to discuss laboratory escapes: despite the considerable alarm these escapes created in the public health community and the participation of US CDC personnel in their investigation, they go unmentioned in the "10 years after" historical review of SARS by the CDC.[49]

Example 5: Foot and Mouth Disease (FMD) from Pirbright 2007

Foot and Mouth Disease (FMD) is a veterinary disease that affects primarily cloven-hoofed domestic animals (pigs, sheep and cattle). It has been eradicated in North America and most of Europe. It is highly transmissible, capable of spreading through direct contact and even through some prepared meats (sausages, airline food), on boots of farm workers (or tourists' shoes: that's why there's that question "have you visited a farm" on the re-entry customs checklist coming into the USA), and even by aerosol spread.

FMD only occasionally causes a mild disease in humans, though exposed humans can carry the virus for up to three days, potentially an important method of spread. FMD causes a more serious disease in animals. Often fatal in young animals, survivors are stunted and lose their economic value. Adult animals die less often, but fail to gain weight or drop in milk production, and can become carriers. Most importantly, strict international quarantine regulations mean that an outbreak will cause all livestock and meat from that country to be banned from international trade. Various methods of outbreak control exist, but all are draconian, requiring massive culling (killing) of "in contact" but otherwise healthy animals surrounding index cases. Restrictions on all animal movement and often all commerce through infected areas are imposed, resulting in secondary economic losses from loss of tourism and general economic activity.

For instance, in the UK in 2001 a FMD outbreak ran from February to October 2001, with travel and export restrictions lasting into 2002. To control the outbreak, all susceptible livestock within 3 kms of an active case were culled. At its peak, 80,000-93,000 animals a week were killed and burned on farms, a total about10 million sheep and cattle. Its direct cost was about $ 6.9 billion with overall costs to the British economy estimated at $ 16 billion.

On August 3, 2007 an outbreak of FMD was reported on a farm in the UK, initially with at least 38 cases in cattle identified. Quarantine measures were introduced and an investigation begun, with culling of surrounding livestock. Most countries banned UK livestock and meat exports. The virus was quickly identified as a strain that had caused a 1967 outbreak in the UK, but was not currently circulating in animals anywhere. Another case of "frozen evolution." However, this outbreak was 2.8 miles (4.6 kms) south of Pirbright, where the only two facilities in the UK that were authorized to hold FMD virus were located. One was the UK Institute for Animal Health (IAH), the other Merial, a commercial veterinary FMD vaccine manufacturer. They both used the 1967 FMD strain, the Merial facility in large amounts (10,000 l) for vaccine manufacture. Operations were suspended at Merial on August 4 and its license to operate withdrawn. A second FMD outbreak quickly appeared near the first, and animal movement with the UK restricted and quarantine zones encompassing both the Pirbright campus and two affected farms were put in place on Aug 7[50]. An initial investigation also published August 7 found no evidence for aerosol or surface water transmission of FMD virus from Pirbright, was investigating other wastewater issues, and suggested human carriage might have occurred[51].

Investigation eventually showed that a waste-water line carrying partially treated waste water from the Merial vaccine plant to the final waste treatment plant run by IAH had gone without routine inspection or maintenance, was damaged, leaking, and had an unsealed manhole opening to the surface, so was capable of contaminating ground and surface water. It became clear that Merial and the IAH each considered the other responsible for such inspection and maintenance, and it had gone undone. The non-secure wastewater line ran through a construction area that recent heavy rains had turned into deep mud, and construction vehicles traversed it and exited the Pirbright campus without inspection or monitoring. These trucks sometimes used the road that passed by the first affected farm. It was concluded that contaminated mud from the defective wastewater line at Pirbright had been carried on tyres or underbody of construction vehicles and caused the first outbreak[52].

For a brief time the outbreak was thought to have ended, and restrictions in the Pirbright area were lifted September 8, 2007. The UK applied to the EU to lift most restrictions on animal exports from the UK to EU on September 11, 2007.

However, on September 12, 2007 FMD was again reported, this time 30 miles north of Pirbright, again with the same 1967 strain of FMD. From September 18-30 multiple additional outbreaks of FMD appeared in the same area. A national embargo on all animal shipment was imposed, and new surveillance zones expanded rapidly until,

overlapping they encompassed a portion of Heathrow Airport and were cut across by the major M4, M3 and M25 motorways. Rapid (real-time) genomic analysis had been ongoing during this outbreak, and indicated a single escape of FMD from Pirbright, which first spread between the two farms of the August outbreak, then went unnoticed at third farm before it blossomed again in mid September. Follow-up investigations identified the intermediate farm[53].

The 2007 UK FMD outbreak identified 278 infected animals, and required 1578 animals to be culled[54]. It disrupted UK agricultural production and exports, and cost an estimated 200 million pounds. The ban of meat exports was particularly damaging as UK beef had only just exited a 10-year embargo by the EU because of BSE (Mad Cow Disease) in May of 2006.

FMD is such an easily transmitted virus with such potential to cause massive economic damage it would appear that manipulating it in a virology laboratory in a FMD free area is manifestly fraught with hazard. Particularly when it might escape by an "invisible" breach in biosafety as it did at Pirbright, and where it might lurk undetected despite heavy surveillance as it did between the two outbreaks.

In the US, previous law had banned it on the continental US, so FMD virus is currently only held in the USDA Plum Island facility off of Long Island (in a facility originally built in the 1950s for anti-animal BW work). Currently a replacement facility under the Department of Homeland Security (DHS), the National Bio-and Agro-Defense Facility (NBAF) is under construction in Manhattan, KS. The move of FMD research to the agricultural heartland of the US was opposed by many groups, including the GAO, but DHS decided on the KS location and construction is ongoing. So much for learning from other's experience.

Conclusions

There are some common themes in these narratives of escaped pathogens. Undetected flaws in the functioning of what was considered at the time to be an adequate standard of technical biocontainment is one theme, as demonstrated in the UK smallpox and FMD cases. Transfer to and handling of inadequately inactivated preparations of dangerous pathogens in areas of the laboratory with reduced biosecurity levels (allowable if the preparation is actually inactivated) is another theme, demonstrated in the SARS and VEE escapes. Poor training of personnel and slack oversight of laboratory procedures negated policy efforts by national and international bodies to achieve biosecurity in the SARS and UK smallpox escapes. The recent appearance of a cohort of immunologically naïve people in the general population, which previously had been uniformly immune was a factor in the UK smallpox and the 1977 H1N1 escapes; in this regard it should be remembered that there is no immunity at all in the general population to most potentially pandemic pathogens currently under discussion, such as Avian influenza and SARS.

It is hardly reassuring that despite stepwise technical improvements in containment facilities and increased policy demands for biosecurity procedures in the

handling of dangerous pathogens, that escapes of these pathogens regularly occur and cause outbreaks in the general environment. Looking at the problem pragmatically, question is not if such escapes will happen in the future, but rather what the pathogen may be and how such an escape will be contained, if indeed it can be contained at all.

Advances in genetic manipulation now allow the augmentation of virulence and transmissibility in dangerous pathogens, and such experiments have been funded and performed, notably in the H5N1 avian influenza virus. The advisability of performing such experiments at all, and particularly in laboratories placed at universities in heavily populated urban areas, where laboratory personnel who are potentially exposed are in daily contact with a multitude of susceptible and unaware citizens is clearly in question.

If such manipulations should be allowed at all, it would seem prudent to conduct them in isolated laboratories where personnel are sequestered from the general public and must undergo a period of "exit quarantine" before re-entering civilian life[55]. Such isolated "detached duty", while inconvenient for the lifestyle of virologists, is hardly foreign to them, since many experience prolonged periods of inconvenient and dangerous field work in the collection of viruses in the field, and certainly many other natural scientists do prolonged and isolated field work as well. The "inconvenience" barrier that requiring such isolation may present to principal investigators and other personnel may act as a natural screening factor to insure that dangerous manipulations to dangerous pathogens are only undertaken when genuinely indicated.

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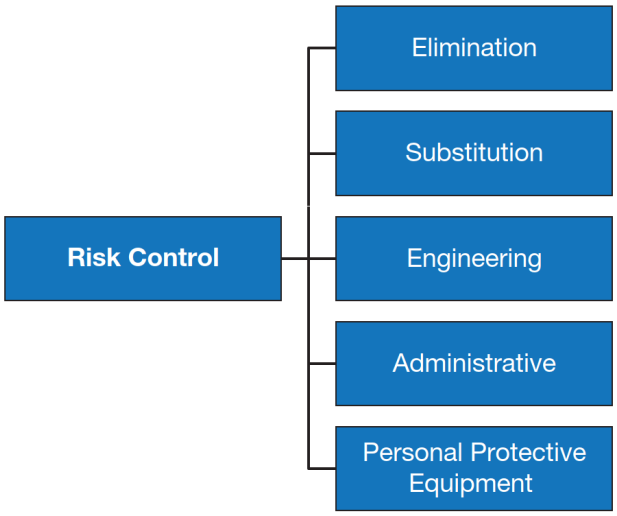
HIERARCHY OF CONTROL

Risk control refers to the program or process used to establish preventive and corrective measures as the final stage of the risk assessment process. Risk control is typically thought of as being organized according to a hierarchy (see Figure 4.3). At the top of the hierarchy is elimination, followed by substitution. When elimination and substitution are not possible or reasonable then engineering, administrative, and lastly personal protective equipment are implemented. The idea behind a control hierarchy is that when followed, there is a systematic process that reduces the probability of risk being realized thus making a system fundamentally safer. It is important to note that not every control is perfect; therefore, it is necessary that for each level within the hierarchy multiple different types of controls (from each category) should be implemented.

FIGURE 4.3

RISK CONTROL



Controlling COVID-19 in the Workplace

Apply the Hierarchy of Controls

Use multiple workplace control measures in a layered approach, starting from the most effective, to reduce the risk of COVID-19 exposure.

Include public health measures such as:

- **vaccination**
- **physical distancing**
- **good hand hygiene**
- **wearing a mask**
- **cleaning and disinfecting**
- **respiratory etiquette**

Engineering Controls

Change the workplace:

- Improve indoor air ventilation and filtration.
- Install physical barriers.
- Install touchless controls for payments, water taps, doors, and bin lids.
- Install hand hygiene equipment: sinks and sanitizer dispensers.
- Adjust layout of furniture, equipment, and workstations to maximize physical distancing.

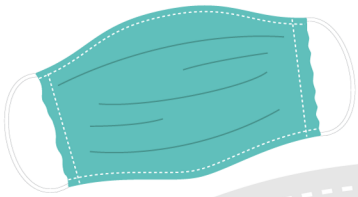
Elimination and Substitution

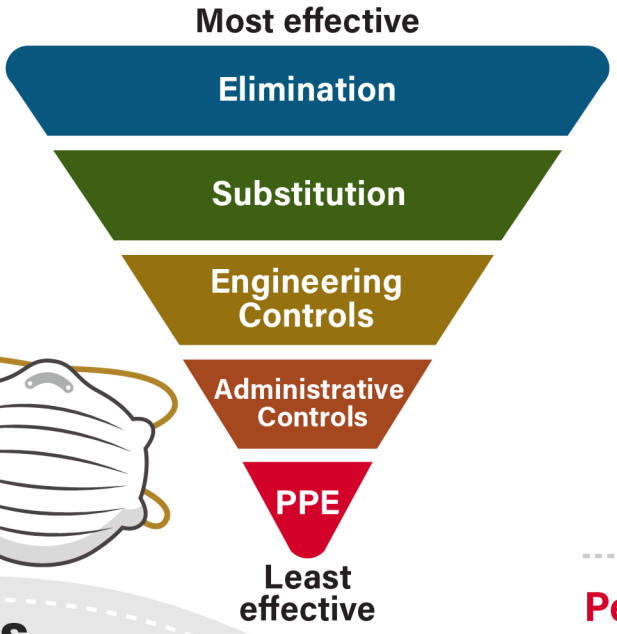
Remove the hazard or replace it with something less hazardous:

- If possible, allow or require workers to work remotely.
- Provide reasonable accommodations where required.
- Use technologies to facilitate working remotely, such as teleconferencing and online forms.

Vaccination

- Vaccination is an important public health measure that can help reduce the risks of COVID-19 in the workplace.
- Vaccination can reduce the risk of severe illness and promote community immunity.





Administrative Controls

Change how people work:

- Communicate risks, rules and procedures.
- Limit occupancy, stagger shifts/teams.
- Screen workers, visitors, and customers.
- Practice the greatest possible physical distancing, good hand hygiene and respiratory etiquette.
- Create a cleaning and disinfecting program for high-touch surfaces and shared objects.
- Update emergency response and business continuity plans.
- Implement a vaccination policy that complies with the requirements in your jurisdiction, and update as required.

MASKS

Source Control

Masks and respirators used as 'source control' are:

- Intended to control the hazard at the source (infected individual) to help protect others.
- Meant to limit the spread of the wearer's exhaled respiratory particles.
- Not required to be fit tested but should be as well-constructed and well-fitting as possible.

PPE

Masks and respirators used as PPE are:

- Intended to control the hazard (exposure to COVID-19) at the worker level.
- Meant to act as a barrier or limit the inhalation of infectious respiratory particles.
- Required to be manufactured to applicable standards and must meet all regulatory requirements, including worker fit testing and training.

Personal Protective Equipment (PPE)

Protect the worker:

- PPE is regulated and must be appropriate to the workplace hazards and activities.
- Workers must be trained how to properly use and maintain their PPE.

Respirators* **Face Shields** **Gowns** **Eye Protection**

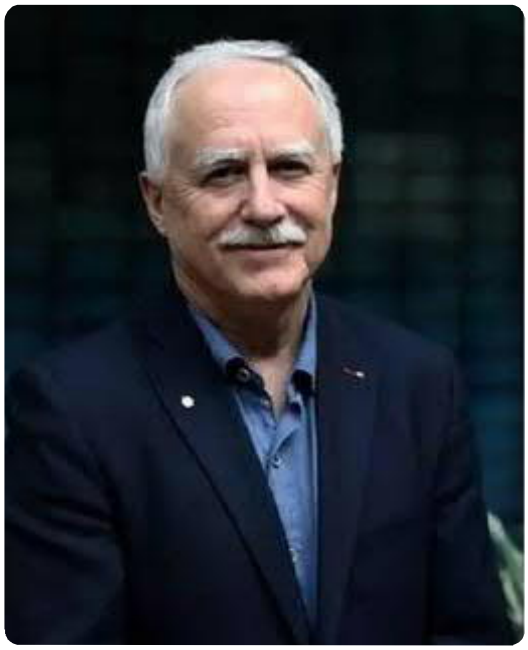
*Respirators used as PPE must be fit tested

Continue to follow current guidance from your local public health authority, government, and health and safety regulator.

CCOHS.ca
Canadian Centre for Occupational Health and Safety

For more information:
www.canada.ca/coronavirus

Dr. John Maynard Conly, MD, FRCPC



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Background

Biography

John Conly is a Professor and former Head of the Department of Medicine at the University of Calgary and Alberta Health Services - Calgary and Area, Canada. He is medically trained as a specialist in infectious diseases, and was a past President of the Canadian Infectious Disease Society, past Chairman of the Board for the Canadian Committee on Antibiotic Resistance and a previous Vice Chair for the Canadian Expert Drug Advisory Committee. He was seconded at a 0.5 FTE to the WHO Health Emergencies Programme as a Senior Technical Officer for COVID-19 during 2020. He is currently the Chair of the World Health Organization Infection Prevention and Control Research and Development Expert Group for COVID-19, a Medical Director for W21C, a Member for the Snyder Institute for Chronic Diseases at the University of Calgary, a member of the Canadian Expert Advisory Group on Antimicrobial Resistance and a member of the Cochrane Collaboration Acute Respiratory Infections Working Group. He has

published over 300 papers and has received multiple career honours in teaching, research, mentorship, innovation and service, including the Ronald Christie Award for outstanding contributions to academic medicine in Canada, the Medal for Distinguished Service from the Alberta Medical Association for outstanding personal contributions to the medical profession and the Order of Canada. He continues as an active consultant in clinical infectious diseases with current interests which focus on antimicrobial resistance and stewardship, prevention of hospital-acquired infections and novel innovations in healthcare.

Awards

- O'Brien Institute for Public Health Research Excellence Award for outstanding contributions to research supported by evidence of impact, O'Brien Institute for Public Health. 2021
- AMMI Canada recognition of Active Members who have achieved professional excellence and made significant contributions to the profession (FAMMI) in Canada , AMMI Canada. 2019
- Impacts of Antimicrobial Resistance in Canada, 2019
- Order of Canada, Chancellery of Honours, Governor General of Canada. 2018
- Alumni Achievement Award, University of Saskatchewan. 2017
- Expert Panel Member, Council of Canadian Academies (CCA) – Assessment of the Potential. 2017

- Medal for Distinguished Service, Alberta Medical Association. 2016
- LEADing Practice Initiative Award, Canada Health Infoway and Accreditation Canada. 2016
- Professionalism Award, Department of Medicine, University of Calgary. 2014
- Ronald Christie Award, Canadian Association of Professors of Medicine. 2012
- John Conly Innovation Academy, AMMI - CACMID Annual Meeting, Vancouver, BC. 2012
- Inductee for the Distinguished Awards Wall, Faculty of Medicine, Calgary, Alberta. 2012
- Establishment of the John Conly/Brent Scott Lectureship, Cumming School of Medicine, University of Calgary. 2012
- John M. Embil Mentorship Award, Canadian Foundation for Infectious Diseases. 2011
- Medical Officer, Department of Global Alert and Response, WHO, Geneva, Switzerland. 2011
- Professeur Invité, Faculté de médicine, Université de Genève, Genève, la Suisse. 2010
- Establishment of Dr. John Conly Innovation Award, Department of Medicine, University of Calgary. 2010
- INSEAD School of Business Alumni Success Story Award, INSEAD School of Business, Fontainebleau, France. 2010
- Innovation Award, Department of Medicine, University of Calgary. 2010
- Chair, Board of Directors, Canadian Committee for Antimicrobial Resistance. 2005
- Co-Director, Snyder Institute for Chronic Diseases . 2004
- Vice Chair, Canadian Expert Drug Advisory Committee. 2003
- Distinguished Service Award, Canadian Infectious Diseases Society. 2002
- Award of Clinical Excellence, Riverdale Hospital, Toronto, Ontario. 2001
- President, Canadian Infectious Diseases Society. 1996
- Excellence in Teaching, Department of Medicine Residents, University of Saskatchewan. 1992
- Clinical Service of the Year, Department of Medicine, University of Saskatchewan. 1989
- Joe Doupe Young Investigator Award, Canadian Society for Clinical Investigation. 1989

COVID-19 Scientific Advisory Group Rapid Response Report

Key Research Questions:

1. **What are the risks of infection transmission related to aerosol generation from use of dental handpieces and other instruments in dental clinics?**
2. **Is there any evidence that SARS (CoV-1 or -2) or MERS-CoV have been transmitted through dental procedures?**
3. **What recommendations can be provided to minimize risk of COVID-19 transmission within dental clinics?**

Context

- Dentistry involves use of dental handpieces and other instruments such as turbine burs, air-water-syringes, drills, ultrasonic scalers, air polishers, and abrasion units *(Abramovitz et al. 2020; Adhikari et al. 2017)* that operate at high speeds and produce aerosols. (Ahmed et al. 2018, Liu et al 2019).
- Grinding, polishing and cutting of dental tissues in the presence of saliva can lead to dispersion of droplets and other particles of various sizes in the surrounding air.
- This review collates literature around bioaerosols, and summarizes existing recommendations around COVID-19 risk reduction for the dental health professional community and patients attending dental clinics.
- There are some areas where existing guidance documents differ in their recommendations, particularly in the setting of AGP (aerosol generating procedures) and the use of N95 masks in the absence of suspect or confirmed COVID-19 infection.
- It is noted that there are AHS hospital dental clinics in Calgary and Edmonton which often handle more complex patients, as well as Oral and Maxillofacial surgeons who work in contracted surgical facilities and hospital OR's to whom both dental facility and AHS IPC guidance apply, given that they may be referred emergency patients with COVID19 who require urgent therapies.
- We acknowledge that we did not seek formal input from all dental health professional groups in Alberta and this should be done as part of any required updates of this initial report.

Engineering professionals should have been consulted

Key Messages from the Evidence Summary

- Using dental instruments can lead to dispersion of droplets and particles of various sizes in the surrounding air. These particles can include:
  - Aerosols - The dental literature commonly refers to aerosols as particles less than 50 µm in diameter, the smallest of which (0.5 to 10 µm) can be inhaled and therefore reach the lungs (Micik et al. 1969). Aerosols containing microorganisms will be referred to as "bioaerosols"
  - Larger particles (> 50 µm; referred to as "splatter") are ejected from the oral cavity and stop on contact with hard surfaces (inertial impaction) or fall to the ground (gravity sedimentation) (Tellier et al., 2019).Airborne transmission is distinguished by evaporation of droplets to droplet nuclei that are <5µm in diameter, which can stay airborne for significant lengths of time *(Setti et al. 2020).* Aerosol generating medical procedures can creater a circumstance of opportunistic airborne transmission of pathogens which are not otherwise spread by the airborne route.
  - Infectious agents/microorganisms - The oral cavity is a site of colonization for a wide spectrum of infectious agents (e.g., bacteria, viruses and fungi), and there is risk that these microorganisms can become aerosolized during dental procedures and potentially infect dental professionals and patients. With high concentrations of bacteria in the oral cavity (nearly 1.0×10^{7}– 1.0×10^{8} (CFU)/mL of saliva), oral bacteria have been identified as components of dental bioaerosols *(Duthil et al 2004).* There is currently no data on the presence of respiratory viruses in dental aerosols.
- A variety of common dental procedures including use of high speed handpieces, ultrasonic devices and air water syringes have the potential to produce bioaerosols.

- Aerosolized droplets are not necessarily equivalent to airborne transmission of viruses via droplet nuclei, (Tellier et al., 2019) which may have implications in determining the degree of infection control practice required, with truly airborne transmission requiring additional considerations such as settling time, air exchanges and N95 mask use.
- Recent primary evidence has shown that first available saliva specimens of COVID-19 positive patients have a median viral load of 3.3 x 10^6 copies /mL (range, 9.9 x 10^2 to 1.2 x 10^8 copies/mL) *(To et al. 2020).* Another study (under review) has documented presence of SARS-CoV-2 in saliva samples of asymptomatic individuals*. (Wyllie et al. 2020).* It is thus plausible that SARS-CoV-2 may be present in aerosols generated during dental procedures on patients who do not have current symptoms, although the likelihood would be dependent both on the viral load in saliva, and the likelihood a currently asymptomatic individual is infected would be related to the intensity of community spread of COVID-19 in a given area and their exposure history.
- The degree to which transmission of viral pathogens may be reduced by oral rinses with demonstrated virucidal properties (Eggers et al., 2015) or aerosol and splatter transmission reduction by High Volume Evacuation/suction (HVE) is unclear.
- With respect to the second question, there is no published evidence in the academic literature demonstrating highly pathogenic coronavirus (i.e., SARS-CoV-1, MERS, SARS-CoV-2) transmission within a dental practice setting. Nonetheless, transmission of a coronavirus, including COVID-19, [from patient to dental professional, from dental professional to patient and from patient to patient] is biologically possible due to demonstrated high salivary titres of SARS-CoV-2 (Wyllie et al. 2020, To et al. 2020), and the production of bioaerosols during common dental procedures.
- In light of the above, although the literature is not extensive or of very high quality, it is reasonable to conclude that dental health professionals may encounter occupational risk of COVID-19 exposure, and that patients also may be at risk for COVID-19 infection as a result of exposure during aerosol producing dental procedures performed on other patients, particularly if precautions are not observed.
- The third question was addressed by collating some of the extensive relevant guidance documents for review. A recent Cochrane review "*Recommendations for the re-opening of dental services: a rapid review of international sources"* (COVID-19 Dental Services Evidence Review (CoDER) Working Group, published on May 7, 2020), summarizes guidelines from international and professional organizations that are published in the grey literature. Recommendations from this review are provided in this document, as are the Canadian Dental Association recommendations, and recent CDC recommendations for review.
- The current Alberta Dental Association and College approach is already congruent with many of these recommendations.
- A key issue between these documents remains defining the "low risk" patient in whom possible AGP may be carried out in a dental office with usual precautions, versus taking extra precautions or referral to a specialized facility. Community based transmission risk is important in this assessment given the possibility of presymptomatic/asymptomatic spread. The CDC document is the only guideline to address this, and stratifies the community risk as follows:

    - ***No to minimal*** *community transmission is defined as evidence of isolated cases or limited community transmission, case investigations underway; no evidence of exposure in large communal setting.*
    - ***Minimal to moderate*** *community transmission is defined as sustained transmission with high likelihood or confirmed exposure within communal settings and potential for rapid increase in cases.*
    - ***Substantial*** *community transmission is defined as large scale community transmission, including communal settings (e.g., schools, workplaces).*

This classification is used to suggest consideration of a tiered approach to universal PPE based on the level of transmission in the community. In areas where there is moderate to substantial community transmission, DHCP should consider wearing a fit tested N95 or higher-level respirator for patients undergoing procedures that might pose higher risk (e.g., those generating potentially infectious aerosols or involving anatomic regions where viral loads might be higher). However, symptom or exposure risks are evaluated separately in determining the approach to each case (if a patient is not "low risk" additional precautions are required).

Two Scientific Advisory group documents are also linked in this summary section, with information deemed important in discussing the questions and literature associated with this review.

- The proportion of people with COVID-19 who remain asymptomatic during their entire course of infection is estimated to be in the range of 5-20% and importantly, presymptomatic spread is well documented and may contribute to transmission given high viral titres prior to onset of symptoms. See the Scientific Advisory Group (2020) rapid review on the possibility of asymptomatic transmission here.
- Recently a pilot was completed at three Alberta hospital Emergency Departments, screening all patients requiring admission who were determined to be "low risk" by symptom and risk screening. None of 1743 patients who screened as low risk were positive, versus 4.5% of patients from the same EDs who were tested due to the presence of symptoms or risk for COVID-19. (Add link to SAG brief on AHS pilot study once posted).

Biased group

Committee Discussion and Reviewer Comments:

The initial committee review included discussion about scope as dental health professional bodies have issued COVID-19 guidance, but it was also acknowledged that there are dental facilities associated with Alberta Health Services, as well as Public Health relevance to this review. Additional reviewers from AHS OMFS/Dentistry were sought for a second draft, and as the risk assessment process is tied to a Public Health based community epidemiologic risk evaluation, additional Public health stakeholder review was sought.

Some unresolved reviewer comments remained after incorporation of feedback. This included the suggestion that it was a fallacy to think that aerosol-generating procedures are the same between medical procedures and dental procedures, and that the document should apply only to hospital based dental settings. This reviewer suggested that the only available studies were out of date and did not reflect current practices, and that predicating discussion on patients who are positive for COVID-19 was not reflective of the current state of accepted and mandated dental care in Alberta dental practices, and that guidelines are scientifically unnecessary.

Finally, some data from preliminary local studies in a dental office using particulate detectors was offered. Although of interest and relevance, inclusion of preliminary, single site, raw data is not possible in this Rapid Review protocol, although this review can be updated with emerging evidence.

Recommendations

1. Patients should be screened for COVID-19 risk prior to dental care, by a combination of symptom screening and risk exposure screening.
   Rationale: Delineating the "low risk" patient remains crucial prior to any AGP. The results of a screening program for non-COVID hospital admissions from three Alberta Emergency rooms illustrates that a combined risk and symptom based protocol was an effective method in our current epidemiologic circumstances. Therefore, although current ADA&C recommendations incorporate many of the infection control practices identified by guidelines summarized in this review, recommended screening processes should incorporate risk exposure as well as symptom screening. Relevant documents to consider in screening practices review include the following:

   Testing & Isolation Criteria
   Expanded symptom (+RF) assessment
   Respiratory CD Assessment (COVID + others)

2. Reevaluation of standard practices within healthcare and dental health settings is required if there is significant evolution of the degree of community based COVID-19 risk. In addition, in dental care settings specifically reevaluation is required if there is evidence of increased respiratory virus transmission risk related to dental care processes.
   Rationale: This represents a contextualization of the current CDC guidelines. Presently, the risk of COVID-19 transmission related to aerosol generating procedures appears to be low when appropriate screening is carried out, and community transmission and prevalence are low. As formal epidemiologic indicators are evolving, this reassessment will require explicit collaboration between the following three

Conly is very against admitting aerosol transmission, which was known to be a mode of trans mission with SARS

Strict compliance with PPE when not enforcing strict compliance with engineering controls is not proper risk assessment nor hazard reduction

parties (1) public health officials to determine and communicate the appropriate epidemiologic threshold for reassessment, (2) dental professionals and (3) regulatory body in ensuring that the recommendations for PPE are congruent with the current level of risk assessment

3. Continued strict compliance to recommended practices and PPE usage for dental health professionals when caring for those with suspect or confirmed COVID-19, with consideration for specialized care referral if dental procedures cannot be deferred until the patient is felt to be noninfectious by public health guidelines is recommended in congruence with guidelines from regional, national and international bodies are available.

4. Dental clinics are recommended to develop standard operating procedures that contextualize existing recommendations from the ADA&C, CDA, and public health bodies for local use.
Rationale: Professional organizations and international bodies of government and academic scientists have produced infection prevention and control recommendations for dental health professionals which are intended to reduce the risk for COVID-19 transmission within a dental care setting, and operationalizing such guidelines may differ in a site specific fashion.

Practical Considerations

- Patients and staff should be screened using a current tool for symptoms suggestive of COVID-19, such as fever, a new cough or a chronic cough that is worsening, new or worsening shortness of breath or difficulty breathing, sore throat, runny nose, as well as Risk Factors for COVID-19 exposure, as detailed here.
- Patients who have COVID-19 symptoms should have dental procedures deferred when possible until symptoms have resolved or until 10 days after symptom onset, whichever is longer.
- If patients with suspect or confirmed COVID-19 require dental procedures that cannot be deferred:
    - staff should wear appropriate PPE (N95 respirator, face shield, gown and gloves)
    - the patient should be cared for in a separate, isolated room (with 4 walls and a closed door if the patients head is within 2 m of the door.) Referral to a dental facility that can accommodate this may be required.
    - to mitigate risk to patient safety, authorities should consider implementing the "Return-to-Practice Office Manual Adapting the Dental Office to the COVID-19 Pandemic" recommendations on deferring appointments, and temporally spacing appointments for any patient whose risk is deemed higher than "low".
- An evaluation of indoor air quality should be considered to assess for appropriate air circulation to minimize risk to dental staff and patients. Parameters for evaluation include the air changes per hour (ACH) and the heating, ventilation, and air conditioning (HVAC) system in place (Canadian Dental Association May 2020).
- Systems should be put in place for regular health follow-up of patients and staff for signs and symptoms of COVID-19, and education provided around notification of the dental practice and public health if new COVID-19 symptoms arise within 14 days of the office visit (for patients).

Not within the scope of the CDA to determine

Strength of Evidence

The overall literature quality was low with few publications identified, many of which were older and antedated current practices. Nonetheless, it is supported that certain dental procedures produce aerosols. Some research studies have been published demonstrating the presence of bacterial isolates within aerosols produced during dental procedures. No evidence was identified demonstrating the presence of viral particles within aerosols produced from dental procedures. Likewise, no evidence was identified demonstrating the direct transmission of coronaviruses between patients and dental health professionals in a dental clinic setting.

Further limitations of this review include a lack of peer-reviewed information specific to COVID-19 and a short turnaround time for this report. As such, there is potential that some information may be missed, and the totality of literature is not guaranteed.

Recommendations for dental health professionals collated here regarding risk reduction of COVID-19 infection during dental procedures are based on expert opinion and extrapolated based on biological plausibility for COVID-19 transmission and infection in dental care settings and theoretical inferences from basic science and the epidemiologic characteristics of SARS-CoV-2.

Summary of Evidence

Question 1.What are the risks of infection transmission related to aerosol generation from use of dental handpieces and other instruments in dental clinics?

A search of the academic literature produced 40 abstracts, from which 17 were selected for full paper review. Excluded manuscripts included opinion papers and narrative reviews. The relevant reported findings for the 17 selected papers is summarized in Appendix 2. The quality of papers was low.

The selected papers included studies conducted in Japan, USA, UK, India, Canada, Italy, Saudi Arabia, South Africa, Turkey, Germany, Taiwan and Brazil. Three (3) studies of varying quality identified the presence of blood in aerosols produced during oral surgery and dental procedures *(Al-Eid et al. 2018; Ishihama et al. 2009; Yamada et al. 2011).* However, the relevance of these in the dental context where HVE is used over low volume suction is limited, and blood exposure is not felt to be a major mode of transmission of SARS-CoV-2.

The direct presence of bacteria in splatter and/or aerosols during procedures such as scaling, root planning, cleaning using high speed instruments, was noted by culture from various surfaces (including flooring, and dental professional contact lenses in the absence of protective eyewear), *(Adhikari et al. 2017; Afzha et al. 2016; Ahmed et al. 2018; Bentley et al. 1994; Dutil et al. 2009; Guida et al. 2012; Hallier et al. 2010; Harrel and Molinari 2004),* ATP (adenosine triphosphate) detection *(Watanabe et al. 2018),* and endotoxin testing *(Singh et al. 2010).* In some of these papers, the described situations were at variance with current practices in Alberta dental practices and their recommended practices to reduce risk are already recommended practice in Alberta (consistent mask and face shield use, and use of HVE).

One study monitored both bacterial and fungal contamination in aerosols *(Kadaifcifer and Cotuk 2014).* Another tested for the presence of fungus in aerosols *(Vilarinho Oliveira 2014)* and two studies confirmed the presence of non-infectious aerosolized particles (such as tooth debris) *(Day et al. 2008; Vilarinho Oliveira et al. 2018).*

Although the study designs and robustness of data vary, there is evidence that aerosols may be produced during dental interventions, and there is a lack of published data on the degree to which current procedures and equipment may reduce potential transmission although some reduction is plausible. Two studies were identified where researchers investigated the presence of viral particles in bioaerosols created during dental procedures. This is a significant research gap, given the mortality and morbidity associated with respiratory viruses and the theoretical probability that they can be aerosolized given their small particle size.

Two of the 17 studies will be further described. In the only Canadian study *(Dutil et al. 2009),* Dutil and colleagues recruited 52 patients to undergo dental treatment with an ultrasonic scaler and air water syringe without high volume suction in isolated rooms. Culturable bioaerosols generated during 30-minute dental cleaning treatments of 4 different consecutive patients were captured by standard microbial samplers (fitted with 3 different types of culture media) placed approximately 30 cm from the patient's mouth. Appropriate room and environment control samples were taken 2 hours before the first patient and 2 hours after the last patient. In an attempt to measure personal exposure to bioaerosols (for both the patient and the dental professional), personal inhalable air samplers were placed in the immediate breathing zones of the hygienist and the patients. The number of colony forming units during treatment were significantly different ($P<0.01$) when compared before treatment and after treatment. Air samples taken in the breathing zones of patients and hygienists showed media exposures of 2.0×10^4 and 1.2×10^4 bacteria/m^3 respectively, with both being statistically much higher than background levels ($P < 0.001$). This study was criticized for a setup which appeared to omit appropriate PPE and incorrect use of a saliva

ejector by a patient. Although PPE would not affect the measurement of aerosols, the incorrect use of a containment measure may.

In the second study *(Liu et al. 2019),* researchers developed an experimental model to measure concentrations and dispersion of suspended particles when drilling and grinding extracted teeth with high speed instrumentation with water spray. Air was pumped through a closed system at a flow rate to simulate nasal airflow. They determined that the concentration of total particulate matter produced by grinding teeth was one order of magnitude (1.72×10^8 particles/m^3) higher than indoor background concentration (1.49×10^7 particles/m^3). Second, 97% of total suspended particles were about 1 µm in diameter or smaller, with an average aerodynamic particle diameter of 53.68 nm, which is close to the diameter of SARS-CoV-2 (diameter of approximately 60–140 nm). The use of a central vacuum system led to a statistically significant reduction ($P< 0.01$) in the median mass concentration of particulate matter, from 7.87 µg/m^3 to 4.18 µg/m^3. This study was criticized for both the nature of the mock procedure performed and the flow rates used which are felt to exceed physiological flow and predispose to particulate matter. This study raises a concern that aerosolized nanosize particles could be generated and that surgical masks may provide suboptimal protection for the wearer. However, the experimental model parameters around air flow would influence the detectable particulates and how well this mimicked physiologic parameters is unclear.

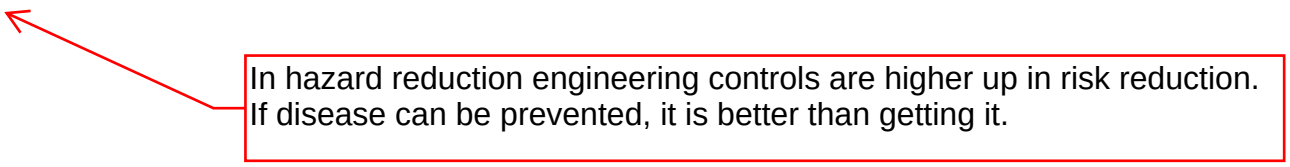
Overall, analysis of the peer-reviewed literature demonstrates that aerosols can be produced during dental procedures. It is unclear how much these may influence transmission risk of SARS-CoV-2 from an infectious patient. Appropriate precautions should be taken by dental health professionals and patients to mitigate the risk of infectious disease transmission in dental clinics.

Question 2:
Is there any evidence that SARS (CoV-1 or -2) or MERS-CoV have been transmitted through dental procedures?
A search was conducted to identify relevant, published and peer-reviewed papers and grey literature that addressed the transmission of coronaviruses (SARS-CoV-1 or -2 or MERS-CoV) via dental procedures. Sixty-four (64) publications and 13 recommendation documents were identified.

A review of the abstracts and grey literature did not identify any research studies providing direct evidence of coronavirus transmission through dental procedures.

However, based on the epidemiologic behavior and biological characteristics of coronaviruses, several studies point to the theoretical association between the production of aerosols from dental procedures and the risk of (i) SARS CoV-1 infection *(Fang 2003; Li et al. 2004; Oxford et al. 2003; Samaranayake and Commission 2003; Samaranayake and Peiris 2004; Smales and Samaranyake 2003; Testarelli et al. 2004),* (ii) MERS-CoV infection *(Al-Sehaibany 2017; Althomairy et al. 2018; Baseer et al. 2016; Gaffar et al. 2019; Kelsch 2014; Sukumaran and Patil 2014)* and (iii) SARS-CoV-2 infection *(Ather et al. 2020; Baghizadeh Fini 2020; Dave et al. 2020; Fallahi et al. 2020; Ge et al. 2020; Izzetti et al. 2020; Lo Giudice 2020; Meng et al. 2020; Odeh et al. 2020; Peng et al. 2020; Ren et al. 2020; Sabino-Silva et al. 2020; Sana et al. 2020)* among dental health professionals.

Question 3: What recommendations can be provided to minimize risk of COVID-19 transmission within dental clinics?
Given the theoretical risk of COVID-19 infection associated with exposure to bioaerosols in dental settings, several reviews, opinion papers, and recommendations have been published in the past four months. In the absence of a vaccine and proven treatments for COVID-19, recommendations focus on controls and practices that prevent exposure to the virus. These activities include (but are not limited to) (i) Active screening for COVID-19 symptoms and risk exposures in patients attending the dental clinic. (ii) use of appropriate PPE (iii) disinfection of hard surfaces where the virus can remain viable for long periods of time; and (iv) sterilization of all re-usable medical equipment; and interim recommendations from the ADA&C have been in place addressing these aspects in the setting of emergency dental care. These recommendations are similar to IPC recommendations in healthcare settings, which are effective in reducing HCW SARS-CoV-2 risk.



Primary literature and existing guidelines are summarized. In early exponential growth of the pandemic a publication from *Meng et al. (2020)* made recommendations to ensure that (1) patient flow is well organized to avoid close contact among patients and between dental personnel and patients; (2) temperature checks and health status of all patients and staff are monitored on a routine basis; (3) use of alternative, less invasive methods for oral examination be employed; and (4) extra PPE was used when handling urgent cases with respiratory symptoms. Based on the Italian experience, *Izzeti et al. (2020*) suggested using pre-triage and triage questionnaires to evaluate the potential risk for SARS-CoV-2 infection in patients. Furthermore, the authors recommended all staff (clinical and administrative) wear face masks and use face shields as an additional layer of protection. For dental procedures, *Izzeti et al.* suggest that power tools should be limited and encourage the use of manual instruments to avoid aerosolization in patients with influenza like symptoms.

Peng et al. (2020) describe the three most likely routes of human exposure from infected patients in a dental clinic setting, namely (1) spread through aerosols generated during dental procedures, (2) contact spread with human fluids (3) contaminated surfaces spread when touching surfaces such as metal, glass, or plastic. To mitigate risks in dental settings, the authors made specific recommendations for dental health professionals regarding (1) patient evaluation; (2) hand hygiene; (3) personal protective measures with primary, secondary and tertiary levels of protection; (4) use of rubber dams; (5) use of anti-retraction hand piece; (6) disinfection of dental clinics; and (7) medical waste management.

A review article by *Ather et al. (2020)* provides an algorithm for patient evaluation, suggestions for dental clinic management, instructions for donning and doffing PPE, and makes technical recommendations for handling dental emergencies in the context of COVID-19.

This rapid review did not identify high quality research evidence that supports or refutes the efficacy of recommendations regarding the prevention of COVID-19 transmission in dental clinic settings. However, recommendations can be extrapolated from indirect evidence such as the documented presence of infectious agents and other nanosized particles in dental procedure-produced aerosols, the epidemiologic transmission characteristics of SARS-CoV-2, as well as general infection prevention and control concepts. It is noted that in the Albertan context, standardized practices in Infection Prevention and Control and use of PPE have antedated the COVID-19 pandemic, so many of the international recommendations are possibly redundant to current processes.

To address question #3, therefore, rather than generating recommendations within this rapid review, recommendations have been linked and extracted from various sources:

1. Two recent Cochrane reviews conducted to address concerns regarding risks of COVID-19 transmission in dental clinic settings. (1) *"Recommendations for the re-opening of dental services: a rapid review of international sources"* (COVID-19 Dental Services Evidence Review (**CoDER**) Working Group May 6 2020) and (2) *"Personal Protective equipment for preventing highly infectious diseases due to exposure to contaminated body fluids in healthcare staff* " *(**Verbeek et al. 2020**)*. In addition, the Canadian Dental Association **CDA** (*Canadian Dental Association. 2020)* used expert opinions of international teams of government and academic scientists to generate recommendations which are also represented in the following summary/synthesis of recommendations.
2. We append a precis of the recent CDC Guidance for Dental Settings below as well (note the documented was since updated, June 3, 2020.)
3. The Alberta Dental Association and College recommendations are linked here.

1.Synthesized CDA and CoDER Recommendations

1. Stagger patient entry to ensure physical distancing between patients and between patients and dental clinic staff. Provide all patients (and family members accompanying them) with surgical masks and require these to be worn at all times while on the premises.
   In the Albertan context, it is further noted that the space available for distancing and the entry and exit flow in a clinic may influence the degree to which staggered appointments are required. **(CDA & CoDER)**

2. All patients should be screened for COVID-19 symptoms and if positive, non-urgent appointments should be postponed until symptom resolution **(CDA & CoDER)**
3. All clinical staff coming into contact with patients, in the presence of aerosol generating procedures (AGP), should be trained on appropriate use of the following PPE: (1) Fit tested N95 respirator; (2) face shield; and (3) gown/lab coat (with cuff). Ensure and document staff training on use of PPE. **(CDA, CoDER & Verbeek)**
4. An N95 respirator, eye protection, gown and gloves should be worn when performing an AGMP on any patient with confirmed or suspect COVID-19. This recommendation is in keeping with the AGMP recommendations in AHS medical facilities. **(CDA, CoDER & Verbeek)**
5. Designate dedicated spaces for donning, doffing and disposal of PPE. **(CoDER)**
6. Ensure that enhanced cleaning and management protocols are strictly followed for both AGP and NON-AGP rooms. **(CoDER)**
7. High volume suction should be utilized during dental aerosol producing procedures and where possible a rubber dam (oropharyngeal isolation) should be used **(CDA & CoDER)**
8. Patients should be instructed to contact their dental clinic as well as Public Health regarding first appearance of COVID-19 symptoms post-treatment, to facilitate contact tracing and testing procedures**. (CoDER)**
9. All clinic staff should stay home if ill and follow pertinent Public Health guidelines for symptom assessment. **(CDA & CoDER)**
10. All clinic staff should be screened for COVID-19 symptoms at the beginning of their shift**. (CDA & CoDER)**
11. All clinic staff should be encouraged to mask if proper physical distancing cannot be maintained consistently **(CDA & CoDER)**

II. Summary of CDC Guidance for Dental Settings

Relevant Transmission dynamics

- SARS-Cov-2 is thought to be spread primarily through respiratory droplets. Airborne transmission from person to person over long distances is unlikely. The virus has been shown to persist in aerosols for hours and surfaces for days in laboratory conditions.
- COVID-19 can be spread from asymptomatic individuals

Why is there a risk in Dental settings?

- Use of rotary dental and surgical instruments (Ultrasonic scalers, handpieces and air-water syringes) create visible spray that contain particle droplets of water, saliva, blood, microorganisms and debris.
- Surgical masks offer protection to mucus membranes of nose and mouth but do NOT protect against inhalation of airborne infectious agents.
- There is NO documented evidence that transmission of SARS-Cov-2 occurs in dental settings.

Recommendations

General Recommendations

- Dental care facilities should use guidance found in the Framework for Healthcare Systems Providing Non-COVID-19 Clinical Care During COVID-19 Pandemic
- Standard Precautions for all patients is reasonable if there is no or minimal community transmission, but given the possibility of spread from asymptomatic persons additional considerations should be taken when feasible.
- If there is minimal to moderate or substantial community transmission, dental care to patients without suspect or confirmed COVID-19 can be provided with additional considerations as below.
- *No to minimal community transmission is defined as evidence of isolated cases or limited community transmission, case investigations underway; no evidence of exposure in large communal setting.*
- *Minimal to moderate community transmission is defined as sustained transmission with high likelihood or confirmed exposure within communal settings and potential for rapid increase in cases.*
- *Substantial community transmission is defined as large scale community transmission, including communal settings (e.g., schools, workplaces).*

- Practice Universal source control and actively screen for COVID-19 symptoms
- Ensure regular supply of appropriate PPE

Specific Recommendations

Patient Management

- Call patient prior to treatment and screen for COVID-19
- Avoid non-emergent care if there is more than minimal community transmission.
- Use teledentistry if possible
- Keep visitors accompanying patient to minimum
- Assess patients on arrival and explain protocol. Patients and visitors should be advised to wear a face covering or provided a surgical mask when they arrive if supplies are adequate
- Patients to put on own mask before leaving premises
- Follow-up with patients in case they develop symptoms after visit.

Facility Considerations

- Ensure adherence with respiratory hygiene and cough etiquette. Display visual alerts.
- Provide alcohol based hand sanitizers
- Ensure physical barriers between administrative staff and patients such as plastic/glass windows
- Chairs are to be 2 meters apart in waiting room
- Minimize number of patients in waiting room and remove all toys and magazines.
- Minimize overlapping appointments

Equipment Considerations

- Ensure that dental unit water lines are working properly and that the water microbiological water quality meet EPA standards
- Ensure that autoclaves and other instrument cleaning equipment are working optimally. Use a biological indicator to test the performance of autoclave

Administrative Controls

- Care for only one patient at a time
- Do not expose unnecessary supplies or equipment for a given procedure.
- Limit number of dental care providers present during AGP.
- Avoid AGP as far as possible- Do not use handpieces, air/water syringe and ultrasonic scalers
- If AGP is necessary, use 4-handed dentistry, high evacuation suction and dental dams to minimize splatter and aerosols
- Consider using preprocedural mouthrinses - although there is no evidence regarding its clinical effectiveness against SARS-CoV-2.

Engineering Considerations

Non-Engineering professionals cannot make these recommendations

Ventilation

- Ensure ventilation systems is up to date with standards
- Use the expertise of HVAC professional to ensure maximum air filtration efficiency and increase percentage of outdoor air supplied through HVAC
- Limit the use of demand-controlled ventilation (triggered by temperature or occupancy) during working hours. Ensure that ventilation continue to work post-occupancy. Keep bathroom exhaust fans on during business hours.
- Consider the use of a portable HEPA air filtration unit during an AGP.
- Consider the use of an upper-room UV germicidal irradiation system

Patient placement

- As far as possible, have only one patient per room

- In open floor plan: (1) make sure that patient chairs are 2 meters apart (2) set up easy to clean floor-to-ceiling barriers between patient chairs (3) Operatories should be oriented parallel to direction of air flow
- Orient patients carefully – (1) patients' head near return air vent away from pedestrian corridors

Patient Volume

- Limit number of patients based on number of rooms , layout and time need to clean and disinfect

Hygiene

- Comply with standard hand hygiene – Wash with soap and water and use alcohol based hand sanitizers

Universal Source Control

- Use surgical masks. Use respirator or facemask if more protection is needed
- Administrative staff to use cloth masks as a minimum
- Dental care workers should change facemasks if they become damp, soiled or hard to breathe.
- Training to be provided to dental care workers on when, how and how cloth masks are to be used.

Personal Protective Equipment

- Dental care worker should wear (1) Surgical Mask (2) Eye Protection (goggles with side shields or full face shield (3) gown or protective clothing
- During AGP on patients assumed to be noninfectious, consider the use of an N95 respirators, or if not available use a surgical mask AND a full face shield as a minimum. Ensure the right protocol for donning and doffing is in place and is adhered to.
- Ensure continuous supply for high quality PPE

Environmental Infection Control

- Ensure compliance with environmental cleaning and disinfection procedures after each patient.
- Wait 15 minutes after patient leave treatment space for droplets to settle and then clean.
- There is no evidence on the performance of ultrasonic waves, high intensity UV and LED blue light to inactivate SARS-Cov-2.
- Do not use sanitizing tunnels

Precautions or strategies for patients suspected or confirmed COVID-19 I

Non –Emergency dental care required

- Provide patient with a mask
- Non-acutely sick patient – send patient back home and instruct to call family physician
- Acutely sick patient – refer patient immediately to hospital

Emergency dental care required

- Individual treatment in an individual room with a closed door
- Avoid AGP if possible
- If AGP is required – Dental Professionals to use N95 or high level respirator
    - Number of dental care worker to be kept at a minimum in the room
    - AGP to be done in airborne infection isolation room
- Schedule patient at the end of the day
- Do not schedule other patients at that time

Monitor and manage dental care workers

- Stay home if ill with no penalties
- Immediate use of cloth or surgical facemask if symptoms develop – inform supervisor and go home
- Ensure continuous training on safety precautions

Evolving Evidence

This is a field of research which is being actively investigated and it is expected that more robust data will be available in the foreseeable future. It is anticipated that multidisciplinary research will be undertaken involving environmental/indoor air quality engineering for indoor bioaerosols, biomedical engineering to improve instrumentation quality and precision and aerosol control, and microbiological research to investigate the presence of aerosolized viral particles produced in dental settings.

Date question received by advisory group: May 7, 2020
Date report submitted to committee: May 15, 2020
Date of first assessment: June 25, 2020
(If applicable) Date of re-assessment:

Authorship and Committee Members

This review was written by Sanjay Beesoon and assisted by Susan Jelinski. It was scientifically reviewed by Stephanie Smith (external primary reviewer), Lynora Saxinger (co-writer, internal primary reviewer) Richard Reive (external reviewer), Joseph Kim (external reviewer), Uma Chandran (external reviewer), Rafael Figueiredo (external reviewer), Harbuksh Sekhon (external reviewer), Jerald Pruner (external reviewer), and Paul Major (external reviewer). Additional review and comments were sought from representatives of Alberta Health and Alberta Health Services Public Health. The full Scientific Advisory Group was involved in discussion and revision of the document: Lynora Saxinger (co-chair), Braden Manns (co-chair), John Conly, Alexander Doroshenko, Shelley Duggan, Nelson Lee, Andrew McRae, Jeremy Slobodan, James Talbot, Brandie Walker, and Nathan Zelyas.

All Doctors, Dentists ans Public Health officials

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Appendix 1

List of Abbreviations

AGP: aerosol-generating procedure

AH: Alberta Health

AHS: Alberta Health Services

ATP: adenosine triphosphate

CFU: colony forming unit

CoDER: COVID-19 Dental Services Evidence Review

COVID-19: Coronavirus Disease-2019

NON-AGP: non-aerosol-generating procedure

PPE: personal protective equipment

SAG: Scientific Advisory Group

Literature Search Details

The literature search was conducted by Lauren Seal from the Knowledge Resource Services team of Knowledge Management, AHS.

Search Strategy for Question 1

Medline/PubMEd

1 exp Aerosols/ (31096)

2 Air Microbiology/ (7584)

3 Inhalation Exposure/ (9215)

4 "aerosol generating medical procedure*".mp. (10)

5 "aerosol generat*".mp. (796)

6 AGMP.mp. (12)

7 1 or 2 or 3 or 4 or 5 or 6 (45966)

8 exp Dental Equipment/ (17612)

9 7 and 8 (169)

10 limit 9 to last 10 years (23)

CINAHL

S1 (MH "Aerosols") 3,141

S2 (MH "Air Microbiology") 565

S3	(MH "Inhalation Exposure")	708
S4	"aerosol generat*" OR "aerosol generat* medical procedure" OR AGMP	152
S5	S1 OR S2 OR S3 OR S4	4,340
S6	(MH "Dental Equipment+")	6,223
S7	S5 AND S6	28

TRIP Pro/Google Scholar/Google Advanced Search

(dental OR dentistry) AND (tool OR equipment OR instrument or drill) AND (aerosol OR "aerosol generating procedure" OR "aerosol generating medical procedure" OR "aerosol generating" OR "air microbiology" OR "inhalation exposure" OR "air exposure") from:2010

Search Strategy to answer Question 2

Medline

1 exp Coronavirus/ or exp Coronavirus Infections/ or coronaviru*.mp. or "corona virus*".mp. or ncov*.mp. or n-cov*.mp. or "novel cov".mp. or COVID-19.mp. or COVID19.mp. or COVID-2019.mp. or COVID2019.mp. or SARS-COV-2.mp. or SARSCOV-2.mp. or SARSCOV2.mp. or SARSCOV19.mp. or Sars-Cov-19.mp. or SarsCov-19.mp. or SARSCOV2019.mp. or Sars-Cov-2019.mp. or SarsCov-2019.mp. or "severe acute respiratory syndrome cov 2".mp. or "2019 ncov".mp. or "2019ncov".mp. (22435)

2 Middle East Respiratory Syndrome Coronavirus/ (1034)

3 "middle east respiratory syndrome".mp. (2058)

4 mers.mp. (4283)

5 mers-cov.mp. (1630)

6 SARS Virus/ (3029)

7 Severe Acute Respiratory Syndrome/ (4574)

8 SARS.mp. (9973)

9 sars-cov.mp. (3312)

10 "severe acute respiratory syndrome".mp. (8918)

11 Influenza A Virus, H1N1 Subtype/ (15124)

12 H1n1.mp. (20713)

13 Pandemics/ (6868)

14 pandemic*.mp. (27214)

15 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 (52277)

16 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 (63184)

17 exp Disease Transmission, Infectious/ (67642)

18 transmission.mp. (510267)

19 transmit*.mp. (176068)

20 infectiousness.mp. (1385)

21 infectivity.mp. (25995)

22 exp Dentistry/ (402678)

23 exp Dental Facilities/ (8553)

24 17 or 18 or 19 or 20 or 21 (674734)

25 22 or 23 (406986)

26 16 and 24 and 25 (40)

CINAHL

S1 (MH "Coronavirus+")

S2 (MH "Coronavirus Infections+")

S3 coronaviru*

S4 "corona virus"

S5 ncov*

S6 n-cov*

S7 COVID-19 OR COVID19 OR COVID-2019 OR COVID2019

S8 SARS-COV-2 OR SARSCOV-2 OR SARSCOV2 OR SARSCOV19 OR SARS-COV-19 OR SARSCOV-19 OR SARSCOV2019 OR SARS-COV-2019 OR SARSCOV-2019

S9 "severe acute respiratory syndrome cov 2" OR "severe acute respiratory syndrome coronavirus*"

S10 "2019 ncov" OR 2019ncov OR Hcov*

S11 S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10

5,426

S12 (MH "Middle East Respiratory Syndrome Coronavirus")

S13 (MH "Middle East Respiratory Syndrome")

S14 "middle east respiratory syndrome" OR MERS-COV OR MERS

S15 (MH "SARS Virus")

S16 (MH "Severe Acute Respiratory Syndrome")

S17 "severe acute respiratory syndrome" OR SARS OR SARS-COV

S18 (MH "Influenza A Virus, H1N1 Subtype")

S19 (MH "Influenza, Pandemic (H1N1) 2009")

S20 H1N1

S21 (MH "Disease Outbreaks")

S22 pandemic*

S23 S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21 OR S22

39,111

S24 S11 OR S23 40,423

S25 (MH "Disease Transmission+") 15,355

S26 transmit* OR transmission OR infectiousness OR infectivity 93,551

S27 S25 OR S26 94,505

S28 (MH "Dentistry+") 104,180

S29 (MH "Dental Facilities+") 3,680

S30 S28 OR S29 106,193

S31 S23 AND S24 AND S30 113

PubMed

1 "middle east respiratory syndrome coronavirus"[MeSH Terms] OR "middle east respiratory syndrome"[Title/Abstract] OR "mers"[Title/Abstract] OR "mers-cov"[Title/Abstract] OR "sars virus"[MeSH Terms] OR "severe acute respiratory syndrome"[MeSH Terms] OR "sars"[Title/Abstract] OR "sars-cov"[Title/Abstract] OR "severe acute respiratory syndrome"[Title/Abstract] OR "influenza a virus, h1n1 subtype"[MeSH Terms] OR "h1n1"[Title/Abstract] OR "pandemics"[MeSH Terms] OR "pandemic"[Title/Abstract] OR "coronavirus"[MeSH Terms] OR "coronavirus infections"[MeSH Terms] OR "coronaviru*"[Title/Abstract] OR "corona virus"[Title/Abstract] OR "ncov*"[Title/Abstract] OR "n cov*"[Title/Abstract] OR "novel cov"[Title/Abstract] OR "COVID-19"[Title/Abstract] OR "COVID19"[Title/Abstract] OR "COVID-2019"[Title/Abstract] OR "COVID2019"[Title/Abstract] OR "SARS-COV-2"[Title/Abstract] OR "SARSCOV-2"[Title/Abstract] OR "sarscov2"[Title/Abstract] OR "SARSCOV19"[Title/Abstract] OR "sars cov 19"[Title/Abstract] OR "severe acute respiratory syndrome cov 2"[Title/Abstract] OR "2019 ncov"[Title/Abstract] OR "2019ncov"[Title/Abstract] OR "severe acute respiratory disease"[Title/Abstract] "middle east respiratory syndrome coronavirus"[MeSH Terms] OR "middle east respiratory syndrome"[Title/Abstract] OR "mers"[Title/Abstract] OR "mers-cov"[Title/Abstract] OR "sars virus"[MeSH Terms] OR "severe acute respiratory syndrome"[MeSH Terms] OR "sars"[Title/Abstract] OR "sars-cov"[Title/Abstract] OR "severe acute respiratory syndrome"[Title/Abstract] OR "influenza a virus, h1n1 subtype"[MeSH Terms] OR "h1n1"[Title/Abstract] OR "pandemics"[MeSH Terms] OR "pandemic"[Title/Abstract] OR "coronavirus"[MeSH Terms] OR "coronavirus infections"[MeSH Terms] OR "coronaviru*"[Title/Abstract] OR "corona virus"[Title/Abstract] OR "ncov*"[Title/Abstract] OR "n cov*"[Title/Abstract] OR "novel cov"[Title/Abstract] OR "COVID-19"[Title/Abstract] OR "COVID19"[Title/Abstract] OR "COVID-2019"[Title/Abstract] OR "COVID2019"[Title/Abstract] OR "SARS-COV-2"[Title/Abstract] OR "SARSCOV-2"[Title/Abstract] OR "sarscov2"[Title/Abstract] OR "SARSCOV19"[Title/Abstract] OR "sars cov 19"[Title/Abstract] OR "severe acute respiratory syndrome cov 2"[Title/Abstract] OR "2019 ncov"[Title/Abstract] OR "2019ncov"[Title/Abstract] OR "severe acute respiratory disease"[Title/Abstract] 69,349

2 ((((disease transmission, infectious[MeSH Terms]) OR (transmission[Title/Abstract])) OR (transmit*[Title/Abstract])) OR (infectiousness[Title/Abstract])) OR (infectivity[Title/Abstract]) "disease transmission, infectious"[MeSH Terms] OR "transmission"[Title/Abstract] OR "transmit*"[Title/Abstract] OR "infectiousness"[Title/Abstract] OR "infectivity"[Title/Abstract] 549,768

3	((((dentistry[MeSH Terms]) OR (dental facilities[MeSH Terms])) OR ("dental clinic*"[Title/Abstract])) OR (dental[Title/Abstract])) OR (dentistr*[Title/Abstract])	"dentistry"[MeSH Terms] OR "dental facilities"[MeSH Terms] OR "dental clinic*"[Title/Abstract] OR "dental"[Title/Abstract] OR "dentistr*"[Title/Abstract]	524,445
4	(("dental clinic*"[Title/Abstract]) OR (dentists[MeSH Terms])) OR (dental staff[MeSH Terms])	"dental clinic*"[Title/Abstract] OR "dentists"[MeSH Terms] OR "dental staff"[MeSH Terms]	25,152
5	#3 OR #4	"dentistry"[MeSH Terms] OR "dental facilities"[MeSH Terms] OR "dental clinic*"[Title/Abstract] OR "dental"[Title/Abstract] OR "dentistr*"[Title/Abstract] OR "dental clinic*"[Title/Abstract] OR "dentists"[MeSH Terms] OR "dental staff"[MeSH Terms]	532,316
6	#1 AND #2 AND #5	((((((((((((((((((((((((((((((("middle east respiratory syndrome coronavirus"[MeSH Terms] OR "middle east respiratory syndrome"[Title/Abstract]) OR "mers"[Title/Abstract]) OR "mers-cov"[Title/Abstract]) OR "sars virus"[MeSH Terms]) OR "severe acute respiratory syndrome"[MeSH Terms]) OR "sars"[Title/Abstract]) OR "sars-cov"[Title/Abstract]) OR "severe acute respiratory syndrome"[Title/Abstract]) OR "influenza a virus, h1n1 subtype"[MeSH Terms]) OR "h1n1"[Title/Abstract]) OR "pandemics"[MeSH Terms]) OR "pandemic"[Title/Abstract]) OR "coronavirus"[MeSH Terms]) OR "coronavirus infections"[MeSH Terms]) OR "coronaviru*"[Title/Abstract]) OR "corona virus"[Title/Abstract]) OR "ncov*"[Title/Abstract]) OR "n cov*"[Title/Abstract]) OR "novel cov"[Title/Abstract]) OR "COVID-19"[Title/Abstract]) OR "COVID19"[Title/Abstract]) OR "COVID-2019"[Title/Abstract]) OR "COVID2019"[Title/Abstract]) OR "SARS-COV-2"[Title/Abstract]) OR "SARSCOV-2"[Title/Abstract]) OR "sarscov2"[Title/Abstract]) OR "SARSCOV19"[Title/Abstract]) OR "sars cov 19"[Title/Abstract]) OR "severe acute respiratory syndrome cov 2"[Title/Abstract]) OR "2019 ncov"[Title/Abstract]) OR "2019ncov"[Title/Abstract]) OR "severe acute respiratory disease"[Title/Abstract]) AND ((((("disease transmission, infectious"[MeSH Terms] OR "transmission"[Title/Abstract]) OR "transmit*"[Title/Abstract]) OR "infectiousness"[Title/Abstract]) OR "infectivity"[Title/Abstract])) AND (((((("dentistry"[MeSH Terms] OR "dental facilities"[MeSH Terms]) OR "dental clinic*"[Title/Abstract]) OR "dental"[Title/Abstract]) OR "dentistr*"[Title/Abstract]) OR (("dental clinic*"[Title/Abstract] OR "dentists"[MeSH Terms]) OR "dental staff"[MeSH Terms]))	57

TRIP Pro/Google Scholar/Google

(coronavirus OR “corona virus” OR sars-cov-2 OR COVID-19 OR SARS OR MERS or H1N1 OR “severe acute respiratory” OR “middle east respiratory syndrome”) AND (transmit OR transmission OR infectiousness OR infectivity) AND (dentistry OR dental OR dentist)

Medrxiv preprints/LitCovid/WHO Database/CEBM/Evidence Aid – Covid-19/REACTing/NEJM/Cochrane Library/covid-evidence.org/Canadian Dental Association/Alberta Dental Association and College/Twitter

(transmit OR transmission OR infectiousness OR infectivity) AND (dentistry OR dental OR dentist)

(dentistry OR dental OR dentist)

Covid-19

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Appendix 2: Evaluation of the Evidence for Question 1

				Mixed Methods Appraisal Tool Criteria:	
	Reference	Peer reviewed?	Type of evidence	Are there clear research questions or a clearly identified issue?	Is the collected data or presented evidence appropriate to address the research questions or issue?
1.	Adhikari, A., Kurella, S., Banerjee, P., & Mitra, A. (2017). Aerosolized bacteria and microbial activity in dental clinics during cleaning procedures. Journal of Aerosol Science, 114, 209-218.	☒ Yes	**Primary Evidence** - 45 air samples were collected from 15 cleaning procedures. Controls before and after cleaning **(USA)** No statistically significant increase in air borne **bacteria** during dental cleaning	☒ Yes	☐ Yes
2.	Afzha, R., Chatterjee, A., Subbaiah, S., & Pradeep, A. (2016). Microbial contamination of contact lenses after scaling and root planing using ultrasonic scalers with and without protective eyewear: A clinical and microbiological study. Journal of Indian Society of Periodontology, 20(3), 273-278.	☒ Yes	Primary evidence **(INDIA)** based on rather weak methodology – evaluate **bacterial** contamination on contact lenses of dentists With and without protective eyewear. 50 % contamination for those who wear eyewear and 100% contamination for those who did not. Data presentation is messy. (Bacteria)	☒ Yes	☐ partially
3	Al-Eid, R. A., Ramalingam, S., Sundar, C., Aldawsari, M., & Nooh, N. (2018). **Detection of visually imperceptible blood contamination in the oral surgical clinic using forensic luminol blood detection agent.** *Journal of International Society of Preventive & Community Dentistry, 8*(4), 327.	☒ Yes	Primary evidence **(SAUDI ARABIA)** – PPE of surgeon, assistant and patients were evaluated for traces of visually imperceptible blood contamination using luminol. **Blood** was detected on all PPEs and other hard surfaces	☒ Yes	☐ Yes
4	Bentley, C. D., Burkhart, N. W., & Crawford, J. J. (1994). **Evaluating spatter and aerosol contamination during dental procedures.** *The Journal of the American Dental [Association, 125*(5), 579-584	☒ Yes	**USA** 5 separate procedures were done on different days. Blood agar plates were placed at different distances from patient's mouth and, on the patient, and the HCW. Controls (before treatment)	☐ Yes	☐ YEs OLD and Weak method

			were set up but results NOT Presented. High **Bacteria** counts (Alpha hemolytic streptococci) noted at all spots.		
5	Day, C. J., Price, R., Sandy, J. R., & Ireland, A. J. (2008). **Inhalation of aerosols produced during the removal of fixed orthodontic appliances: A comparison of 4 enamel cleanup methods.** *American Journal of Orthodontics & Dentofacial Orthopedics, 133*(1), 11-17.	☒ Yes	Enamel cleaning in a lab simulated patient – **(UK)** fast hand piece with water irrigation demonstrated the highest air concentration of debris Particle Size range from 0.4 to 15 µm (NON-Infectious particulates)	☒ Yes	☐ Yes
6	Dutil, S., Mériaux, A., de Latrémoille, M., Lazure, L., Barbeau, J., & Duchaine, C. (2009). **Measurement of airborne bacteria and endotoxin generated during dental cleaning.** *Journal of Occupational & Environmental Hygiene, 6*(2), 121-130. doi:10.1080/15459620802633957 Retrieved	☒ Yes	**CANADIAN** Strongest Study design involving 52 patients Statistically significant differences of culturable bioaerosol concentrations before, during, and after dental treatments and determined by (1) culture (2) endotoxin The aerodynamic diameter of dental bioaerosols generated during treatments was between 0.65 µm and 0.84 µm, with a median value of 0.73 µm.	☒ Yes	☒ Yes
7	Guida, M., Galle, F., Di Onofrio, V., Nastro, R. A., Battista, M., Liguori, R., . . . Liguori, G. (2012). **Environmental microbial contamination in dental setting: A local experience.** *Journal of Preventive Medicine & Hygiene, 53*(4), 207-212.	☒ Yes	Air Samples collected by both active and passive sampling to monitor **bacterial** contamination **(ITALY)** T1 Before the working Day T2 During Working Day T3 At the end of the working Day Air contamination did not increase during the day for both for active and passive sampling	☒ Yes	☐ Yes
8	Hallier, C., Williams, D. W., Potts, A. J. C., & Lewis, M. A. O. (2010). **A pilot study of bioaerosol reduction using an air cleaning system**	☒ Yes	The Air Cleaning Systems (UK) resulted in a significant reduction (p = 0.001) in the mean bioaerosols (cfu/m3) of	☒ Yes	☐ Yes

	during dental procedures. *British Dental Journal, 209*(8), E14		all three clinics compared with baseline measurements. The mean level of bioaerosols recorded during dental procedures, with or without the ACS activated respectively, was 23.9 cfu/m3 and 105.1 cfu/m3 (p = 0.02) for cavity preparation, 23.9 cfu/m3 and 62.2 cfu/m3 (p = 0.04) for history and oral examination; 41.9 cfu/m3 and 70.9 cfu/m3 (p = 0.01) for ultrasonic scaling and 9.1 cfu/m3 and 66.1 cfu/m3 (p = 0.01) for extraction. The predominant microorganisms isolated were Staphylococcus species and Micrococcus species.		
9	Ishihama, K., Koizumi, H., Wada, T., Iida, S., Tanaka, S., Yamanishi, T., . . . Kogo, M. (2009). Evidence of aerosolised floating blood mist during oral surgery. Journal of Hospital Infection, 71(4), 359-364. doi:10.1016/j.jhin.2008.12.005	☒ Yes	Monitoring of **blood** mist. (JAPAN) At locations 20, 60 and 100cm from the surgical site, 76%, 60 % and 57%, respectively, of the particulates were positive in blood presumptive tests. - contaminated materials have the potential to be suspended in air as blood-contaminated aerosol.	☒ Yes	☐ Yes
10	Jain, M., Mathur, A., Mathur, A., Mukhi, P. U., Ahire, M., & Pingal, C. (2020). **Qualitative and quantitative analysis of bacterial aerosols in dental clinical settings: Risk exposure towards dentist, auxiliary staff, and patients.** *Journal of Family Medicine and Primary Care, 9*(2), 1003-1008.	☒ Yes	Agar plates used to capture aerosolized bacteria particles before, during and after activity in dental science settings. (INDIA) Statistically significant increase of colony counts during dental work, compared with baseline. Statistically significant decrease in colony counts 2 hours after dental work is completed.	☒ Yes	☐ Yes
11	Kadaifciler, D. G., & Cotuk, A. (2014). **Microbial contamination of dental unit waterlines and effect on quality of indoor air.** *Environmental Monitoring & Assessment, 186*(6), 3431-3444		Microbiological air quality in 20 Dental clinics. **TURKEY** Microfungal and bacterial CFUs in indoor and outdoor air in the morning and evening. Weak methodology and data	☒ Yes	☐ Yes

			analysis. In 90 % of DOs, medium (<500 CFU/m3) bacterial contamination levels in the air were observed. In all DOs, low level (<100 CFU/m3) of microfungal air contamination was observed.		
12	Kimmerle, H., Wiedmann-Al-Ahmad, M., Pelz, K., Wittmer, A., Hellwig, E., & Al-Ahmad, A. (2012). **Airborne microbes in different dental environments in comparison to a public area.** *Archives of Oral Biology, 57*(6), 689-696.	☒ Yes	**GERMANY** Bacterial CFUs measured every hour from 7.30 AM to 5.30 PM for 4 different days. High CFUs associated with higher activity during the day. M-shape trend for both normal dental clinic and multichair clinics.	☒ Yes	☐ Yes
13	Liu, M., Chen, C., Chuang, L., Lin, W., & Wan, G. (2019). **Removal efficiency of central vacuum system and protective masks to suspended particles from dental treatment.** *PloS One, 14*(11),	☒ Yes	**TAIWAN** concentration of total PM produced by grinding teeth *(1.72×10^8 particles/m^3)* was significantly higher than the indoor background concentration *(1.49×10^7 particles/m^3).* The aerodynamic diameter of most particles measured by a Nano analyzer was below 70 nm and the average particle diameter was 53.68 nm. Average concentration of **ultrafine particles** was 2.1x10^{11} particles/m^3, while drilling teeth in the absence of a vacuum system. ROBUST STUDY DESIGN. Only study looking at non-infectious PM	☒ Yes	☒ Yes
14	Singh, T. S., Bello, B., Mabe, O. D., Renton, K., & Jeebhay, M. F. (2010). **Workplace determinants of endotoxin exposure in dental healthcare facilities in south africa.** *Annals of Occupational Hygiene, 54*(3), 299-308.		**SOUTH AFRICA** Cross sectional study design N=413 Compared airborne endotoxins levels is spaces for least exposed personnel (2.4) to most exposed personnel (5.6). Age of the dental units explained the most variability observed in the personal air samples	☒ Yes	☐ Yes
15	Vilarinho Oliveira, Aline Maria Alves, de Alencar, R. M., Santos Porto, J. C., Fontenele Ramos, Isla Rita Brito,	☒ Yes	**BRAZIL** Assess air contamination with a variety of fungal species. Clinic 1	☒ Yes	☐ Yes

	Noleto, I. S., Santos, T. C., & Mobin, M. (2018). **Analysis of fungi in aerosols dispersed by high speed pens in dental clinics from teresina, piaui, brazil.** *Environmental Monitoring & Assessment, 190*(2), 56.		contained 15 seats separated by 1.70 m × 6.5 cm dividers, forming boxes. Clinic 2 was composed of 27 chairs and there was no partitions and the space between one chair and another. Results indicate that the minimum safety distance between the dental chairs should be more than 2 meters		
16	Watanabe, A., Tamaki, N., Yokota, K., Matsuyama, M., & Kokeguchi, S. (2018). **Use of ATP bioluminescence to survey the spread of aerosol and splatter during dental treatments.** *Journal of Hospital Infection, 99*(3), 303-305. doi:10.1016/j.jhin.2018.03.002	☒ Yes	**JAPAN** ---Ultrasonic scaling and professional mechanical tooth cleaning were performed as dental treatments on 10 students, with each procedure lasting for 10 min. Bioluminescence used to measure **ATP** as a marker for bacterial activity. ATP after/before ratio on googles ATP after/before ratio on googles 24. Suggesting heavy contamination	☒ Yes	☐ Yes
17	Yamada, H., Ishihama, K., Yasuda, K., Hasumi-Nakayama, Y., Shimoji, S., & Furusawa, K. (2011). **Aerial dispersal of blood-contaminated aerosols during dental procedures.** *Quintessence International, 42*(5), 399-405.	☒ Yes	**JAPAN** 102 samples 50 cm from the mouth and 124 samples 100 cm from mouth. Monitor **blood** containing aerosols using leucomalachite green during 4 different procedures. Blood was detected at both 50 cm and 100 cm for all 4 procedures. As expected positivity rates are lower at 100 cm (further away from the patients mouth)	☒ Yes	☐ Yes

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COVID-19 Scientific Advisory Group Rapid Review Methodology

1. Question Generation

Questions for consideration of a Scientific Advisory Group (SAG) review are submitted to the committee co-chairs for consideration. SAG evidence requests are brought forward from a variety of sources including the Alberta Health Services (AHS) Emergency Coordination Centre (ECC), AHS Zone Emergency Operations Centres (ZEOCs), AHS Personal Protective Equipment (PPE) Task Force, or the Office of the Chief Medical Officer of Health (CMOH). Questions related to any aspect of COVID-19 are within scope. The final formulation of the topic question is by the co-chairs in consultation with the requestor.

On occasion, a question will be posed with a strict timeline that does not allow for discussion at an upcoming SAG meeting. These questions are treated as Rapid Evidence Briefs and use a modified methodology.

2. Rapid Review Team

Each question is assigned to a team that includes the following roles:

- Research librarian
- Writer
- Writing assistant
- Primary reviewer (A committee member or is closely affiliated with SAG and has subject matter expertise)
- Secondary reviewers (Subject matter experts who are not necessarily a SAG committee member)

3. Literature Search

Evidence for the accepted questions is identified by a combination of structured database searches and hand-searching. Support for the literature search is provided by AHS Knowledge Resource Services (KRS). A research librarian is assigned to the question and works with the writer to identify the key concepts and search terms for the research question.

In general, the search is limited to articles published in 2019-2021, with no jurisdictional or language limits. The databases searched usually include OVID MEDLINE, EMBASE, LitCovid, TRIP PRO, PubMed, WHO Global research on coronavirus (database), Google and Google Scholar. Additional databases can be requested by the writer as appropriate for the research question and the type of evidence expected. Canadian and international repositories and evidence services are hand searched to identify reviews that have been conducted by other jurisdictions.

Resources suggested by the primary and secondary reviewers are included on an *ad hoc* basis, as are relevant articles identified over the course of the literature review that may not have been identified in the database search. Literature that has come out or is highlighted as relevant after the search is completed will be listed for inclusion in any subsequent update, but may also be included at the Co-Chair's discretion in the current review depending on its criticality to the review recommendations and timelines.

4. Evidence Screening and Synthesis

Literature is screened according to pre-determined inclusion and exclusion criteria. In addition to question-specific exclusion criteria, literature is subjected to the screening criteria used in the Mixed Methods Appraisal Tool (MMAT).

Due to the novelty of COVID-19 and the speed with which new evidence is available, a wide variety of evidence types are eligible for inclusion. Preprints, primary literature, secondary literature, and grey literature from reputable sources are eligible for inclusion in the evidence summary. Literature based on the author's opinion (such as commentaries, opinion letters, and editorials) are not excluded automatically but must balance the body of evidence with the research question. Articles from non-academic sources (such as news reports, blog posts, or social media sources) are generally not eligible for inclusion but may be important as context for the topic.

The evidence is presented as a narrative synthesis. The exact structure and presentation of the report is left to the writer's discretion (with input from the primary reviewer, SAG director and co-chairs) to best serve the evidence and the research questions.

5. Evaluation of the Evidence

A full critical appraisal of the evidence is often not feasible due to the short turnaround times required by the review requestor. A novel approach was developed, drawing on the methods used by reputable evidence groups such as the Oxford Centre for Evidence-Based Medicine, the Cochrane Library, and the AGREE Trust. This approach evolved over first four weeks of the SAG process, so early reviews are heterogeneous in their appraisal method.

Writers are asked to consider and comment on the volume, quality, applicability, and consistency of the evidence included in the report, paying special attention to sample sizes, comparators, and risk of bias. These comments are included in the appendix of reports that were completed after April 2020.

6. Expert Review

In most cases, the first draft of the report is reviewed by a primary and multiple secondary reviewers prior to presentation to the committee.

The primary reviewer is usually a member of SAG and is responsible for reviewing the report, co-writing as necessary, providing feedback, commenting on gaps and included data sources, drafting or refining the recommendations, presenting the report at the SAG committee meeting, and incorporating committee feedback.

The secondary reviewers are not necessarily affiliated with SAG but are subject matter experts who are able to provide additional feedback on the report and comment on gaps and included data sources. The SAG co-chairs also provide feedback on the report and may request revisions prior to presentation at the committee meeting.

At meetings, the in-progress or completed report draft is presented and the full SAG committee is given the opportunity to discuss and provide feedback on the report that is incorporated prior to approval. The committee will use a consensus process to determine whether the review needs only minor changes and can be submitted without further committee involvement, needs moderate

changes requiring committee members to review and vote on approval, or needs extensive revision and should be brought back to another meeting for further discussion.

Tries to use a disclaimer to remove liability for deliberate and wilful criminal negligence. Evidence that a legal team looked at this and the law society of Alberta is responsible for allowing this to happen. The law society of Alberta funded counsel for Derek Allchurch of Pipella Law LLP in T-1404-20 of the Federal Court of Canada to suppress the information of the distribution of a biological weapon that was used to interfere with the 2020 United States election and over throw a duly elected government. The Alberta Law society is subject to the executive order relating to election fraud

expected from measurements of undisturbed air. Personal activities frequently bring individuals close to air contaminant sources, and also generate particles. Sampling near a person requires special care because the degree of exposure also depends on particle transport as air flows around the body because of convective forces, air turbulence, and obstructions nearby (Rodes and Thornburg 2004).

Optical particle counters (OPCs) are widely used and likely to become more so. They are very convenient and provide real-time, size-selective data. Individual aerosol particles are illuminated with a bright light as they singly pass through the OPC viewing volume. Each particle scatters light, which is collected to produce a voltage pulse in the detector. The pulse size is proportional to the particle size, and the electronics of the OPC assign counts to size ranges based on the pulse size. ASHRAE *Standard* 52.2 defines a laboratory method for assessing the performance of media filters using an OPC to measure particle counts up- and downstream of the filter in 12 size ranges between 0.3 and 10 μm. Filters tested are reported with their **minimum efficiency reporting value (MERV)** number based on the count data. It is important to sample isokinetically in fast-moving airstreams, such as found in air ducts. This involves sizing the OPC sampling inlet so that the speed of sampled air entering the device is the same as that of air moving past the OPC. If this is not done, the OPC samples inaccurately, capturing too few particles when sampling speed is greater than surrounding air speed, and too many when sampling speed is less than that of the surrounding air.

Counters are also used to test cleanrooms for compliance with the U.S. General Services Administration's (GSA) *Federal Standard* 209E and ISO *Standard* 14644-1. Cleanrooms are defined in terms of the number of particles in certain size ranges that they contain; for more information, see Chapter 18 of the 2015 *ASHRAE Handbook—HVAC Applications*.

Modern OPCs use laser light scattering to continuously count and size airborne particles and, depending on design, can detect particles down to 0.1 μm (ASTM *Standard* F50). Like all aerosol instruments, OPCs should be used with awareness of their limitations. They report particle size from a calibration curve that was developed from a particle having particular optical properties. Actual ambient aerosol particle size is usually close to that indicated by an OPC, but significant errors are possible. Further, many OPCs were developed for cleanroom applications and can become overloaded in other applications. In general, they do not inform the user when they are out of range.

A **condensation nucleus counter (CNC)** can count particles to below 0.01 μm. These particles, present in great numbers in the atmosphere, serve as nuclei for condensation of water vapor (Scala 1963). CNCs provide total particle numbers, and cannot directly provide particle sizing information.

Another indirect method measures the **optical density** of the collected dust, based on the projected area of the particles. Dust particles can be sized with graduated scales or optical comparisons using a standard microscope. The lower limit for sizing with the light-field microscope is approximately 0.9 μm, depending on the vision of the observer, dust color, and available contrast. This size can be reduced to about 0.4 μm by using oil-immersion objective techniques. Dark-field microscopic techniques reveal particles smaller than these, to a limit of approximately 0.1 μm. Smaller submicroscopic dusts can be sized and compared with the aid of an electron microscope.

Other sizing techniques may take into account velocity of samplings in calibrated devices and actual settlement measurements in laboratory equipment. The electron microscope and sampling instruments such as the cascade impactor have been successful in sizing particulates, including fogs and mists. Each method of measuring particle size distribution gives a different value for the same size particle, because different properties are actually measured. For example, a microscopic technique may measure longest dimension, whereas impactor results are based on aerodynamic behavior (ACGIH 2001).

Chemical analysis of particles follows protocols for analysis of any solid material. At industrial concentrations, adequate samples can be obtained from ducts and dust collectors. Because larger particles settle faster than smaller particles, the size and nature of deposited particles often change as suspended particles move away from a source. For instance, near the inlet of an outdoor air intake, deposited particles will probably be larger and have a coarse composition (e.g., road dust might predominate), whereas further into the duct, fine-mode aerosols would predominate (e.g., condensed oil fume and soot). At the lower concentrations of workplaces, samples are usually collected onto filters, and the filter deposit is analyzed. The filter material must be chosen to not interfere with the analysis. After sample preparation, analysis methods for gaseous contaminant analysis generally apply.

Typical Particle Levels

Particle counters, which detect particles larger than about 0.1 μm, indicate that the number of suspended particles is enormous. A room with heavy cigarette smoke has a particle concentration of 10^{12} particles per cubic metre. Even clean air typically contains over 35×10^6 particles/m^3. If smaller particles detectable by other means, such as an electron microscope or condensation nucleus counter, are also included, the total particle concentration would be greater than these concentrations by a factor of 10 to 100. Ultrafine particles have been widely found at concentrations of 20×10^9 to 40×10^9 per cubic metre in both indoor and outdoor air.

Much of the published particle data uses mass concentration rather than number concentration, because the EPA outdoor limits are expressed in these units (see Table 12). Typical daytime average levels of outdoor PM_{10} and $PM_{2.5}$ in school or residential areas may be 10 to 30 μg/m^3 (Fromme et al. 2008; Williams et al. 2000), and $PM_{2.5}$ in heavy traffic areas in large cities can be >100 μg/m^3 (Cassidy et al. 2007; Han et al. 2005). In indoor environments with few internal sources, such as offices, indoor concentrations in both size ranges tend to be smaller than outdoors because of HVAC filters. However, in schools, where activity levels are higher and indoor sources are present, indoor PM_{10} and $PM_{2.5}$ may be higher than outdoors (Fromme et al. 2008).

Indoor particle levels in buildings are influenced by the number of people and their activities, building materials and construction, outdoor conditions, ventilation rate, and the air-conditioning and filtration system. Wallace (1996) reviewed the effect of outdoor particle penetration and activities on indoor concentrations, and Riley et al. (2002) discussed the influence of air exchange rates and filtration on indoor concentrations in residential and commercial buildings. ASHRAE research project RP-1281 investigated factors affecting the penetration of fine and ultrafine particles into nonresidential buildings (Facciola et al. 2006). For further information, see the section on Commercial, Institutional, and Residential Indoor Air Contaminants.

Bioaerosols

Bioaerosol refers to any airborne biological (generally microscopic) particulate matter. Though often thought of as originating as microorganisms (fungi, bacteria, viruses, protozoa, algae), bioaerosols may also be derived from plants (pollen and plant fragments) and animals (hair, dander, and saliva from dogs and cats; dust mites). In addition to the intact organisms (e.g., bacteria), their parts (fungal spores and fragments), components (endotoxins, allergens), and products (dust mite antigen-containing fecal pellets and fungal mycotoxins) may be included in the definition. The antigen or toxin to which the body reacts may be quite small; only trace amounts are required for many allergic or toxic reactions. Public interest has focused on airborne microorganisms responsible for diseases and

infections, primarily bacteria and viruses. These are discussed in more detail in Chapter 10, including sources, transmission and health effects.

Bioaerosols are universally present in both indoor and outdoor environments. Although the organisms that are sources of bioaerosols are living, reproducing organisms, bioaerosols themselves do not have to be alive to cause allergic, toxic, or inflammatory responses. In fact, as little as 1 to 10% of outdoor bioaerosol is thought to be viable (Jaenicke 1998; Tong and Lighthart 1999). Furthermore, fragments of bioaerosols may be transported while attached to inert particles, and may be important from an exposure standpoint.

Problems of concern to engineers occur when microorganisms grow and reproduce indoors, or when large amounts of bioaerosol enter a building from outdoors. Buildings are not sterile, nor are they meant to be. The presence of bacteria and fungi outdoors in soil, water, and atmospheric habitats is normal. For example, spores of the fungus *Cladosporium* are commonly found on leaves and dead vegetation and are almost always found in outdoor air samples. Often, they are found in variable numbers in indoor air, depending on the amount of outdoor air that infiltrates into interior spaces or is brought in by the HVAC system. Outdoor microorganisms and pollen can also enter on shoes and clothing and be transferred to other surfaces in buildings. Through infiltration, pollens can be quite problematic indoors, often depending on the season. Pollens discharged by weeds, grasses, and trees (Hewson et al. 1967; Jacobson and Morris 1977; Solomon and Mathews 1978) can cause hay fever. Bioaerosols have properties of special interest to air-cleaning equipment designers (see Chapter 29 of the 2016 *ASHRAE Handbook—HVAC Systems and Equipment*).

Some bioaerosols originate indoors. Many allergens, such as cat, dog, and dust mite allergens, either originate indoors or have indoor reservoirs (e.g., bedding and fleecy materials). Much attention has been given to fungi, which include yeasts, molds (filamentous fungi), and mildews, as well as large mushrooms, puffballs, and bracket fungi. All fungi depend on external sources of organic material for both energy requirements and carbon skeletons, but very small quantities can be sufficient. Thus, they increase in number when supplied with a suitable food source such as very small quantities of dirt/dust, paper, or wood. Sufficient nutrients are almost always readily available in buildings. For growth to occur, sufficient water must also be available in the material. Adequate moisture content of a material may be attained when the relative humidity is high (typically, the equilibrium relative humidity of a porous material with the surrounding air is greater than 60%), on water incursion from a roof leak or condensation, or when water spills. Note that controlling humidity in a space per se is not sufficient to limit fungal growth; the moisture content of the substrate material must be controlled. Some species of mold that often grow on water-damaged building materials are listed in Table 3.

Mycotoxins are secondary metabolites produced by some filamentous fungi, Some are very toxic (e.g., aflatoxin) and some are beneficial (e.g., penicillin). There are hundreds of different mycotoxins, and more are being identified all the time. Mycotoxins can cause disease and death in humans and other animals, primarily when consumed in foods. However, inhalation exposure of fungal spores and fragments containing mycotoxins has been raised as a potential concern as a bioaerosol contaminant.

Bacteria are much simpler organisms than fungi, and generally require more water for growth, often growing in liquids or periodically wetted surfaces. Whereas fungi actively release spores into the environment from contaminated surfaces, bacteria are generally aerosolized by reentrainment of the water in which they are growing. Cooling towers, evaporative condensers, and domestic water service systems all provide water and nutrients for amplification of bacteria such as *Legionella pneumophila*. Growth of bacterial populations to excessive concentrations is generally associated with inadequate preventive maintenance or leaks creating standing water. *Legionella* is well studied, and ASHRAE *Standard* 188-2015 discusses its risk management.

Table 3 Common Molds on Water-Damaged Building Materials

Mold Species	Mold Species
Alternaria alternata	*Memnoniella echinata*
Aspergillus sydowii	*Paecilomyces variotii*
Aspergillus versicolor	*Penicillium aurantogriseum*
Chaetomium globusum	*Penicillium chrysogenum*
Cladosporium cladosporioides	*Penicillium citrinum*
Cladosporium sphaerospermum	*Penicillium commune*
Eurotium herbariorum	*Stachybotrys chartarum*
Eurotium repens	*Ulocladium chartarum*

Source: Health Canada (2004).

Drain pans and cooling coils may also be sources of bacteria. Growth can occur in the water and the organism then can become aerosolized in water droplets. The most common source of bacteria as bioaerosols, especially in closed occupied spaces, may be droplet nuclei caused by actions such as sneezing, or carried on human or animal skin scales.

Endotoxins are components of the cell walls of a fairly large group of bacteria classified as Gram negative (i.e., crystal violet dye, used in a Gram stain test, does not affect their color). Endotoxin exposure has been associated with a number of adverse health effects. Humidifier fever has been associated with inhalation of endotoxins (Teeuw et al. 1994).

Units of Measurement. Microorganisms such as bacteria and molds are usually measured either as total culturable or total countable bioaerosol. **Culturable** (viable) bioaerosols are those that can be grown in a laboratory culture. Results are normally reported as number of colony-forming units (CFU) per unit sample volume (m^3 for air samples), area (cm^2 for surface samples) or mass (g for bulk samples).

Countable bioaerosols (viable plus nonviable) include all particles that can be identified and counted under a microscope. Results are reported as number of particles per unit sample volume, area, or mass.

Allergens are usually expressed as their mass (in ng) per unit volume; endotoxins are expressed as EU or endotoxin units.

Sampling. Sampling when bioaerosols are suspected as a contaminant may include direct plating of observed microbial growth, collection of bulk or surface samples, or air sampling. Surface sampling is useful for bioaerosol detection, because the surface may constitute a long-time duration sampler. The principles of sampling and analysis for bioaerosols are presented in depth by Macher (1999). AIHA (1996) gives assessment guidelines for collecting microbiological particulates.

The same principles that affect collection of an inert particulate aerosol sample also govern air sampling for microorganisms. Air sampling is not likely to yield useful data and information unless the sample collected is representative of exposure, and appropriate control samples are collected. The most representative samples are those collected in breathing zones over the range of aerosol concentrations. Personal sampling (in the breathing zone of a worker) is generally preferable, but area sampling (e.g., on a table) over representative periods is more commonly performed. Some investigators attempt to replicate exposure conditions through disturbance of the environment (semiaggressive sampling), such as occurs when walking on carpets, slamming doors, and opening books or file cabinets.

The sampling method selected affects the measured count. Methods that rely on counting analysis usually report higher concentrations than those that use culturing analysis, because of inclusion of nonviable particles. There is no single, ideal bioaerosol sampler, but rather several complementary techniques that may

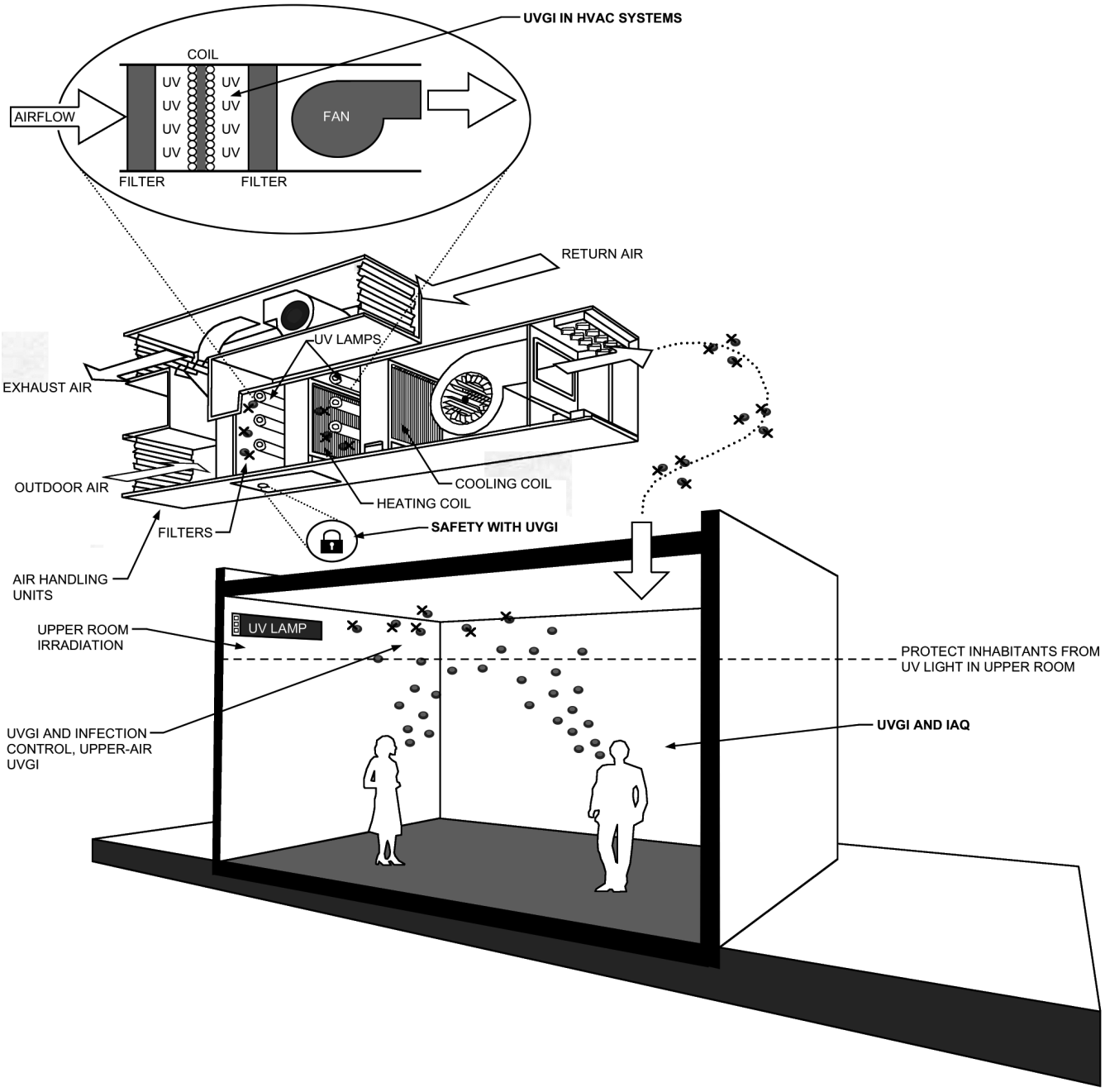

Fig. 1 Potential Applications of UVGI to Control Microorganisms in Air and on Surfaces
(ASHRAE 2009)

and is a commonly used indicator of overall UVGI effectiveness, representing the percentage of the microbial population inactivated after one pass through the irradiance field(s).

Deactivation rate constants (*k*-values) are species-dependent and relate the susceptibility of a given microorganism population to UV radiation (Hollaender 1943; Jensen 1964; Sharp 1939, 1940). Measured *k*-values for many species of viruses, bacteria, and fungi have been published in the scientific literature and previously summarized (Brickner et al. 2003; Kowalski 2009; Philips 2006). As shown in Figure 3, bacteria are generally more susceptible to UVGI than fungi, but this is not always the case (see Chapter 16 of the 2008 *ASHRAE Handbook—HVAC Systems and Equipment*). It is more difficult to generalize when it comes to viruses. Reported *k*-values for different species of microorganisms vary over several orders of magnitude. Consequently, choosing which *k*-value to use for UVGI system design is often difficult and confusing. The variation in reported *k*-values makes generalizing the use of Equation (2) particularly complicated for heterogeneous microbial populations. Even accurately determining *S* for one specific microorganism can be difficult, because the reported *k*-values for the same species sometimes differ significantly.

Variations in published *k*-values may relate to differences in conditions under which the UV irradiance was conducted (in air, in water, or on surfaces), the methods used to measure the irradiance level, and errors related to the microbiological culture-based measurements of microbial survival (Martin et al. 2008). Because no

By Standard Number / 1910.502 - Healthcare.

- **Part Number:** 1910
- **Part Number Title:** Occupational Safety and Health Standards
- **Subpart:** 1910 Subpart U
- **Subpart Title:** COVID–19
- **Standard Number:** 1910.502
- **Title:** Healthcare.
- **GPO Source:** e-CFR

1910.502(a)

Scope and application.

1910.502(a)(1)

Except as otherwise provided in this paragraph, this section applies to all settings where any employee provides healthcare services or healthcare support services.

1910.502(a)(2)

This section does not apply to the following:

1910.502(a)(2)(i)

The provision of first aid by an employee who is not a licensed healthcare provider;

1910.502(a)(2)(ii)

The dispensing of prescriptions by pharmacists in retail settings;

1910.502(a)(2)(iii)

Non-hospital ambulatory care settings where all non-employees are screened prior to entry and people with suspected or confirmed COVID-19 are not permitted to enter those settings;

1910.502(a)(2)(iv)

Well-defined hospital ambulatory care settings where all employees are fully vaccinated and all non-employees are screened prior to entry and people with suspected or confirmed COVID-19 are not permitted to enter those settings;

1910.502(a)(2)(v)

Home healthcare settings where all employees are fully vaccinated and all non-employees are screened prior to entry and people with suspected or confirmed COVID-19 are not present;

1910.502(a)(2)(vi)

Healthcare support services not performed in a healthcare setting (*e.g.*, off-site laundry, off-site medical billing); or

1910.502(a)(2)(vii)

Telehealth services performed outside of a setting where direct patient care occurs.

Note to paragraph (a)(2):

OSHA does not intend to preclude the employers of employees who are unable to be vaccinated from the scope exemption in paragraphs (a)(2)(iv) and (v) of this section. Under various anti-discrimination laws, workers who cannot be vaccinated because of medical conditions, such as allergies to vaccine ingredients, or certain religious beliefs may ask for a reasonable accommodation from their employer. Accordingly, where an employer reasonably accommodates an employee who is unable to be vaccinated in a manner that does not expose the employee to COVID-19 hazards (*e.g.*, telework, working in isolation), that employer may be within the scope exemption in paragraphs (a)(2)(iv) and (v) of this section.

1910.502(a)(3)

1910.502(a)(3)(i)

Where a healthcare setting is embedded within a non-healthcare setting (*e.g.*, medical clinic in a manufacturing facility, walk-in clinic in a retail setting), this section applies only to the embedded healthcare setting and not to the remainder of the physical location.

1910.502(a)(3)(ii)

Where emergency responders or other licensed healthcare providers enter a non-healthcare setting to provide healthcare services, this section applies only to the provision of the healthcare services by that employee.

1910.502(a)(4)

In well-defined areas where there is no reasonable expectation that any person with suspected or confirmed COVID-19 will be present, paragraphs (f), (h), and (i) of this section do not apply to employees who are fully vaccinated.

Note 1 to paragraph (a):

Nothing in this section is intended to limit state or local government mandates or guidance (*e.g.*, executive order, health department order) that go beyond the requirements of and are not inconsistent with this section.

Note 2 to paragraph (a):

Employers are encouraged to follow public health guidance from the Centers for Disease Control and Prevention (CDC) even when not required by this section.

1910.502(b)

Definitions. The following definitions apply to this section:

Aerosol-generating procedure means a medical procedure that generates aerosols that can be infectious and are of respirable size. For the purposes of this section, only the following medical procedures are considered aerosol-generating procedures: Open suctioning of airways; sputum induction; cardiopulmonary resuscitation; endotracheal intubation and extubation; non-invasive ventilation (*e.g.*, BiPAP, CPAP); bronchoscopy; manual ventilation; medical/surgical/postmortem procedures using oscillating bone saws; and dental procedures involving: Ultrasonic scalers; high-speed dental handpieces; air/water syringes; air polishing; and air abrasion.

Airborne infection isolation room (AIIR) means a dedicated negative pressure patient-care room, with special air handling capability, which is used to isolate persons with a suspected or confirmed airborne-transmissible infectious disease. AIIRs include both permanent rooms and temporary structures (*e.g.*, a booth, tent or other enclosure designed to operate under negative pressure).

Ambulatory care means healthcare services performed on an outpatient basis, without admission to a hospital or other facility. It is provided in settings such as: Offices of physicians and other health care professionals; hospital outpatient departments; ambulatory surgical centers; specialty clinics or centers (*e.g.*, dialysis, infusion, medical imaging); and urgent care clinics. Ambulatory care does not include home healthcare settings for the purposes of this section.

Assistant Secretary means the Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor, or designee.

Clean/cleaning means the removal of dirt and impurities, including germs, from surfaces using soap and water or other cleaning agents. Cleaning alone reduces germs on surfaces by removing contaminants and may also weaken or damage some of the virus particles, which decreases risk of infection from surfaces.

Close contact means being within 6 feet of any other person for a cumulative total of 15 minutes or more over a 24-hour period during that person's potential period of transmission. The potential transmission period runs from 2 days before the person felt sick (or, for asymptomatic people, 2 days prior to test specimen collection) until the time the person is isolated.

Common areas means indoor or outdoor locations under the control of the employer that more than one person may use or where people congregate (*e.g.*, building lobbies, reception areas, waiting rooms, restrooms, break rooms, eating areas, conference rooms).

COVID-19 (Coronavirus Disease 2019) means the respiratory disease caused by SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2). For clarity and ease of reference, this section refers to ''COVID-19'' when describing exposures or potential exposures to SARS-CoV-2.

COVID-19 positive and *confirmed COVID-19* refer to a person who has a confirmed positive test for, or who has been diagnosed by a licensed healthcare provider with, COVID-19.

COVID-19 symptoms mean the following: Fever or chills; cough; shortness of breath or difficulty breathing; fatigue; muscle or body aches; headache; new loss of taste or smell; sore throat; congestion or runny nose; nausea or vomiting; diarrhea.

COVID-19 test means a test for SARS-CoV-2 that is:

(i) Cleared or approved by the U.S. Food and Drug Administration (FDA) or is authorized by an Emergency Use Authorization (EUA) from the FDA to diagnose current infection with the SARS-CoV-2 virus; and

(ii) Administered in accordance with the FDA clearance or approval or the FDA EUA as applicable.

Direct patient care means hands-on, face-to-face contact with patients for the purpose of diagnosis, treatment, and monitoring.

Disinfect/disinfection means using an EPA-registered, hospital-grade disinfectant on EPA's "List N" (incorporated by reference, § 1910.509), in accordance with manufacturers' instructions to kill germs on surfaces.

Elastomeric respirator means a tight-fitting respirator with a facepiece that is made of synthetic or rubber material that permits it to be disinfected, cleaned, and reused according to manufacturer's instructions. It is equipped with a replaceable cartridge(s), canister(s), or filter(s).

Facemask means a surgical, medical procedure, dental, or isolation mask that is FDA-cleared, authorized by an FDA EUA, or offered or distributed as described in an FDA enforcement policy. Facemasks may also be referred to as "medical procedure masks."

Face shield means a device, typically made of clear plastic, that:

(i) Is certified to ANSI/ISEA Z87.1 (incorporated by reference, § 1910.509); or

(ii) Covers the wearer's eyes, nose, and mouth to protect from splashes, sprays, and spatter of body fluids, wraps around the sides of the wearer's face (i.e., temple-to-temple), and extends below the wearer's chin.

Filtering facepiece respirator means a negative pressure particulate respirator with a non-replaceable filter as an integral part of the facepiece or with the entire facepiece composed of the non-replaceable filtering medium.

Fully vaccinated means 2 weeks or more following the final dose of a COVID-19 vaccine.

Hand hygiene means the cleaning and/or disinfecting of one's hands by using standard handwashing methods with soap and running water or an alcohol-based hand rub that is at least 60% alcohol.

Healthcare services mean services that are provided to individuals by professional healthcare practitioners (*e.g.*, doctors, nurses, emergency medical personnel, oral health professionals) for the purpose of promoting, maintaining, monitoring, or restoring health. Healthcare services are delivered through various means including: Hospitalization, long-term care, ambulatory care, home health and hospice care, emergency medical response, and patient transport. For the purposes of this section, healthcare services include autopsies.

Healthcare support services mean services that facilitate the provision of healthcare services. Healthcare support services include patient intake/admission, patient food services, equipment and facility maintenance, housekeeping services, healthcare laundry services, medical waste handling services, and medical equipment cleaning/reprocessing services.

High-touch surfaces and equipment means any surface or piece of equipment that is repeatedly touched by more than one person (*e.g.*, doorknobs, light switches, countertops, handles, desks, tables, phones, keyboards, tools, toilets, faucets, sinks, credit card terminals, touchscreen-enabled devices).

Physical location means a site (including outdoor and indoor areas, a structure, or a group of structures) or an area within a site where work or any work-related activity (*e.g.*, taking breaks, going to the restroom, eating, entering, or exiting work) occurs. A physical location includes the entirety of any space associated with the site (*e.g.*, workstations, hallways, stairwells, breakrooms, bathrooms, elevators) and any other space that an employee might occupy in arriving, working, or leaving.

Powered air-purifying respirator (PAPR) means an air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering.

Respirator means a type of personal protective equipment (PPE) that is certified by NIOSH under 42 CFR part 84 or is authorized under an EUA by the FDA. Respirators protect against airborne hazards by removing specific air contaminants from the ambient (surrounding) air or by supplying breathable air from a safe source. Common types of respirators include filtering facepiece respirators, elastomeric respirators, and PAPRs. Face coverings, facemasks, and face shields are not respirators.

Screen means asking questions to determine whether a person is COVID-19 positive or has symptoms of COVID-19.

Surgical mask means a mask that covers the user's nose and mouth and provides a physical barrier to fluids and particulate materials. The mask meets certain fluid barrier protection standards and Class I or Class II flammability tests. Surgical masks are generally regulated by FDA as Class II devices under 21 CFR 878.4040 - Surgical apparel.

Vaccine means a biological product authorized or licensed by the FDA to prevent or provide protection against COVID-19, whether the substance is administered through a single dose or a series of doses.

Workplace means a physical location (*e.g.*, fixed, mobile) where the employer's work or operations are performed.

1910.502(c)

COVID-19 plan.

1910.502(c)(1)

The employer must develop and implement a COVID-19 plan for each workplace. If the employer has multiple workplaces that are substantially similar, its COVID-19 plan may be developed by workplace type rather than by individual workplace so long as all required site-specific information is included in the plan.

Note to paragraph (c)(1):
For those employers who do not already have a COVID-19 plan in place, OSHA's website contains significant compliance assistance materials, including a model plan.

1910.502(c)(2)

If the employer has more than 10 employees, the COVID-19 plan must be written.

1910.502(c)(3)

The employer must designate one or more workplace COVID-19 safety coordinators to implement and monitor the COVID-19 plan developed under this section. The COVID-19 safety coordinator(s) must be knowledgeable in infection control principles and practices as they apply to the workplace and employee job operations. The identity of the safety coordinator(s) must be documented in any written COVID-19 plan. The safety coordinator(s) must have the authority to ensure compliance with all aspects of the COVID-19 plan.

1910.502(c)(4)

1910.502(c)(4)(i)

The employer must conduct a workplace-specific hazard assessment to identify potential workplace hazards related to COVID-19.

1910.502(c)(4)(ii)

In order for an employer to be exempt from providing controls in a well-defined area under paragraph (a)(4) of this section based on employees' fully vaccinated status, the COVID-19 plan must include policies and procedures to determine employees' vaccination status.

1910.502(c)(5)

The employer must seek the input and involvement of non-managerial employees and their representatives, if any, in the hazard assessment and the development and implementation of the COVID-19 plan.

1910.502(c)(6)

The employer must monitor each workplace to ensure the ongoing effectiveness of the COVID-19 plan and update it as needed.

1910.502(c)(7)

The COVID-19 plan must address the hazards identified by the assessment required by paragraph (c)(4) of this section, and include policies and procedures to:

1910.502(c)(7)(i)

Minimize the risk of transmission of COVID-19 for each employee, as required by paragraphs (d) through (n) of this section;

Note to paragraph (c)(7)(i):

Although the employer's COVID-19 plan must account for the potential COVID-19 exposures to each employee, the plan can do so generally and need not address each employee individually.

1910.502(c)(7)(ii)

Effectively communicate and coordinate with other employers:

1910.502(c)(7)(ii)(A)

When employees of different employers share the same physical location, each employer must effectively communicate its COVID-19 plan to all other employers, coordinate to ensure that each of its employees is protected as required by this section, and adjust its COVID-19 plan to address any particular COVID-19 hazards presented by the other employees. This requirement does not apply to delivery people, messengers, and other employees who only enter a workplace briefly to drop off or pick up items.

1910.502(c)(7)(ii)(B)

An employer with one or more employees working in a physical location controlled by another employer must notify the controlling employer when those employees are exposed to conditions at that location that do not meet the requirements of this section; and

1910.502(c)(7)(iii)

Protect employees who in the course of their employment enter into private residences or other physical locations controlled by a person not covered by the OSH Act (*e.g.*, homeowners, sole proprietors). This must include procedures for employee withdrawal from that location if those protections are inadequate.

Note to paragraph (c):

The employer may include other policies, procedures, or information necessary to comply with any applicable federal, state, or local public health laws, standards, and guidelines in their COVID-19 plan.

1910.502(d)

Patient screening and management. In settings where direct patient care is provided, the employer must:

1910.502(d)(1)

Limit and monitor points of entry to the setting. This provision does not apply where emergency responders or other licensed healthcare providers enter a non-healthcare setting to provide healthcare services.

1910.502(d)(2)

Screen and triage all clients, patients, residents, delivery people and other visitors, and other non-employees entering the setting.

1910.502(d)(3)

Implement other applicable patient management strategies in accordance with CDC's "COVID-19 Infection Prevention and Control Recommendations" (incorporated by reference, § 1910.509).

Note to paragraph (d):
The employer is encouraged to use telehealth services where available and appropriate in order to limit the number of people entering the workplace.

1910.502(e)

Standard and Transmission-Based Precautions. Employers must develop and implement policies and procedures to adhere to Standard and Transmission-Based Precautions in accordance with CDC's "Guidelines for Isolation Precautions" (incorporated by reference, § 1910.509).

1910.502(f)

Personal protective equipment (PPE) -

1910.502(f)(1)

Facemasks.

1910.502(f)(1)(i)

Employers must provide, and ensure that employees wear, facemasks that meet the definition in paragraph (b) of this section; and

1910.502(f)(1)(ii)

The employer must ensure a facemask is worn by each employee over the nose and mouth when indoors and when occupying a vehicle with other people for work purposes. The employer must provide a sufficient number of facemasks to each employee to comply with this paragraph and must ensure that each employee changes them at least once per day, whenever they are soiled or damaged, and more frequently as necessary (*e.g.*, patient care reasons).

1910.502(f)(1)(iii)

The following are exceptions to the requirements for facemasks in paragraph (f)(1)(ii) of this section:

1910.502(f)(1)(iii)(A)

When an employee is alone in a room.

1910.502(f)(1)(iii)(B)

While an employee is eating and drinking at the workplace, provided each employee is at least 6 feet away from any other person, or separated from other people by a physical barrier.

1910.502(f)(1)(iii)(C)

When employees are wearing respiratory protection in accordance with § 1910.134 or paragraph (f) of this section.

1910.502(f)(1)(iii)(D)

When it is important to see a person's mouth (*e.g.*, communicating with an individual who is deaf or hard of hearing) and the conditions do not permit a facemask that is constructed of clear plastic (or includes a clear plastic window). In such situations, the employer must ensure that each employee wears an alternative to protect the employee, such as a face shield, if the conditions permit it.

1910.502(f)(1)(iii)(E)

When employees cannot wear facemasks due to a medical necessity, medical condition, or disability as defined in the Americans with Disabilities Act (42 U.S.C. 12101 *et seq*.), or due to a religious belief. Exceptions must be provided for a narrow subset of persons with a disability who cannot wear a facemask or cannot safely wear a facemask, because of the disability, as defined in the Americans with Disabilities Act (42 U.S.C. 12101 *et seq*.), including a person who cannot independently remove the facemask. The remaining portion of the subset who cannot wear a facemask may be exempted on a case-by-case basis as required by the Americans with Disabilities Act and other applicable laws. In all such situations, the employer must ensure that any such employee wears a face shield for the protection of the employee, if their condition or disability permits it. Accommodations may also need to be made for religious beliefs consistent with Title VII of the Civil Rights Act.

1910.502(f)(1)(iii)(F)

When the employer can demonstrate that the use of a facemask presents a hazard to an employee of serious injury or death (*e.g.*, arc flash, heat stress, interfering with the safe operation of equipment). In such situations, the employer must ensure that each employee wears an alternative to protect the employee, such as a face shield, if the conditions permit it. Any employee not wearing a facemask must remain at least 6 feet away from all other people unless the employer can demonstrate it is not feasible. The employee must resume wearing a facemask when not engaged in the activity where the facemask presents a hazard.

Note to paragraph (f)(1)(iii)(F):

With respect to paragraphs (f)(1)(iii)(D) through (F) of this section, the employer may determine that the use of face shields, without facemasks, in certain settings is not appropriate due to other infection control concerns.

1910.502(f)(1)(iv)

Where a face shield is required to comply with this paragraph or is otherwise required by the employer, the employer must ensure that face shields are cleaned at least daily and are not damaged. When an employee provides a face shield that meets the definition in paragraph (b) of this section, the employer may allow the employee to use it and is not required to reimburse the employee for that face shield.

1910.502(f)(2)

Respirators and other PPE for exposure to people with suspected or confirmed COVID-19. When employees have exposure to a person with suspected or confirmed COVID-19, the employer must provide:

1910.502(f)(2)(i)

A respirator to each employee and ensure that it is provided and used in accordance with § 1910.134 and

1910.502(f)(2)(ii)

Gloves, an isolation gown or protective clothing, and eye protection to each employee and ensure that the PPE is used in accordance with subpart I of this part.

Note to paragraph (f)(2):
When there is a limited supply of filtering facepiece respirators, employers may follow the CDC's "Strategies for Optimizing the Supply of N95 Respirators" (available at: *https://www.cdc.gov/coronavirus/2019-ncov/hcp/respirators-strategy/index.html*). Where possible, employers are encouraged to select elastomeric respirators or PAPRs instead of filtering facepiece respirators to prevent shortages and supply chain disruption.

1910.502(f)(3)
Respirators and other PPE during aerosol-generating procedures. For aerosol-generating procedures performed on a person with suspected or confirmed COVID-19, the employer must provide:

1910.502(f)(3)(i)
A respirator to each employee and ensure that it is provided and used in accordance with § 1910.134; and

1910.502(f)(3)(ii)
Gloves, an isolation gown or protective clothing, and eye protection to each employee and ensure that the PPE is used in accordance with subpart I of this part.

Note 1 to paragraph (f)(3):
For aerosol-generating procedures on a person suspected or confirmed with COVID-19, employers are encouraged to select elastomeric respirators or PAPRs instead of filtering facepiece respirators.

Note 2 to paragraph (f)(3):
Additional requirements specific to aerosol-generating procedures on people with suspected or confirmed COVID-19 are contained in paragraph (g) of this section.

1910.502(f)(4)
Use of respirators when not required.

1910.502(f)(4)(i)
The employer may provide a respirator to the employee instead of a facemask as required by paragraph (f)(1) of this section. In such circumstances, the employer must comply with § 1910.504.

1910.502(f)(4)(ii)
Where the employer provides the employee with a facemask as required by paragraph (f)(1) of this section, the employer must permit the employee to wear their own respirator instead of a facemask. In such circumstances, the employer must also comply with § 1910.504.

1910.502(f)(5)
Respirators and other PPE based on Standard and Transmission-Based Precautions. The employer must provide protective clothing and equipment (*e.g.*, respirators, gloves, gowns, goggles, face shields) to each employee in accordance with Standard and Transmission-Based Precautions in healthcare settings in accordance with CDC's "Guidelines for Isolation Precautions" (incorporated by reference, § 1910.509) and ensure that the protective clothing and equipment is used in accordance with subpart I of this part.

1910.502(g)

Aerosol-generating procedures on a person with suspected or confirmed COVID-19. When an aerosol-generating procedure is performed on a person with suspected or confirmed COVID-19:

1910.502(g)(1)

The employer must limit the number of employees present during the procedure to only those essential for patient care and procedure support.

1910.502(g)(2)

The employer must ensure that the procedure is performed in an existing AIIR, if available.

What do you do if you have no AIIR? No guidance? if it is important to use in an AIIR provision must be made to mitigate contagion in the absence of AIIR. none is given.

1910.502(g)(3)

After the procedure is completed, the employer must clean and disinfect the surfaces and equipment in the room or area where the procedure was performed.

Note to paragraph (g):
Respirators and other PPE requirements during aerosol-generating procedures are contained in paragraph (f)(3) of this section.

1910.502(h)

Physical distancing.

1910.502(h)(1)

The employer must ensure that each employee is separated from all other people by at least 6 feet when indoors unless the employer can demonstrate that such physical distancing is not feasible for a specific activity (*e.g.*, hands-on medical care). This provision does not apply to momentary exposure while people are in movement (*e.g.*, passing in hallways or aisles).

1910.502(h)(2)

When the employer establishes it is not feasible for an employee to maintain a distance of at least 6 feet from all other people, the employer must ensure that the employee is as far apart from all other people as feasible.

Note to paragraph (h):
Physical distancing can include methods such as: Telehealth; telework or other remote work arrangements; reducing the number of people, including non-employees, in an area at one time; visual cues such as signs and floor markings to indicate where employees and others should be located or their direction and path of travel; staggered arrival, departure, work, and break times; and adjusted work processes or procedures to allow greater distance between employees.

1910.502(i)

Physical barriers. At each fixed work location outside of direct patient care areas (*e.g.*, entryway/lobby, check-in desks, triage, hospital pharmacy windows, bill payment) where each employee is not separated from all other people by at least 6 feet of distance, the employer must install cleanable or disposable solid barriers, except where the employer can demonstrate it is not feasible. The barrier must be sized (*e.g.*, height and width) and located to block face-to-face pathways between individuals based on where each person would normally stand or sit. The barrier may have a pass-through space at the bottom for objects and merchandise.

Note to paragraph (i):

Physical barriers are not required in direct patient care areas or resident rooms.

1910.502(j)

Cleaning and disinfection.

1910.502(j)(1)

In patient care areas, resident rooms, and for medical devices and equipment, the employer must follow standard practices for cleaning and disinfection of surfaces and equipment in accordance with CDC's "COVID-19 Infection Prevention and Control Recommendations" and CDC's "Guidelines for Environmental Infection Control," pp. 86-103, 147-149 (both incorporated by reference, § 1910.509).

1910.502(j)(2)

In all other areas, the employer must:

1910.502(j)(2)(i)

Clean high-touch surfaces and equipment at least once a day, following manufacturers' instructions for application of cleaners; and

1910.502(j)(2)(ii)

When the employer is aware that a person who is COVID-19 positive has been in the workplace within the last 24 hours, clean and disinfect, in accordance with CDC's "Cleaning and Disinfecting Guidance" (incorporated by reference, § 1910.509), any areas, materials, and equipment under the employer's control that have likely been contaminated by the person who is COVID-19 positive (*e.g.*, rooms they occupied, items they touched).

1910.502(j)(3)

The employer must provide alcohol-based hand rub that is at least 60% alcohol or provide readily accessible hand washing facilities.

1910.502(k)

Ventilation.

1910.502(k)(1)

Employers who own or control buildings or structures with an existing heating, ventilation, and air conditioning (HVAC) system(s) must ensure that:

1910.502(k)(1)(i)

The HVAC system(s) is used in accordance with the HVAC manufacturer's instructions and the design specifications of the HVAC system(s);

1910.502(k)(1)(ii)

The amount of outside air circulated through its HVAC system(s) and the number of air changes per hour are maximized to the extent appropriate;

1910.502(k)(1)(iii)

All air filters are rated Minimum Efficiency Reporting Value (MERV) 13 or higher, if compatible with the HVAC system(s). If MERV-13 or higher filters are not compatible with the HVAC system(s), employers must use filters with the highest compatible filtering efficiency for the HVAC system(s);

Under MERV 13 will not provide adequate filtration for viruses. other instruction must be given. This is criminal and will facilitate spread of disease.

1910.502(k)(1)(iv)

All air filters are maintained and replaced as necessary to ensure the proper function and performance of the HVAC system(s); and

1910.502(k)(1)(v)

All intake ports that provide outside air to the HVAC system(s) are cleaned, maintained, and cleared of any debris that may affect the function and performance of the HVAC system(s).

1910.502(k)(2)

Where the employer has an existing AIIR, the employer must maintain and operate it in accordance with its design and construction criteria.

Note 1 to paragraph (k):
This section does not require installation of new HVAC systems or AIIRs to replace or augment functioning systems.

Note 2 to paragraph (k):
In addition to the requirements for existing HVAC systems and AIIRs, all employers should also consider other measures to improve ventilation in accordance with “CDC's Ventilation Guidance,” (available at *www.cdc.gov/coronavirus/2019-ncov/community/ventilation.html*) (*e.g.*, opening windows and doors). This could include maximizing ventilation in buildings without HVAC systems or in vehicles.

1910.502(l)

Health screening and medical management -

1910.502(l)(1)

Screening.

1910.502(l)(1)(i)

The employer must screen each employee before each work day and each shift. Screening may be conducted by asking employees to self-monitor before reporting to work or may be conducted in-person by the employer.

1910.502(l)(1)(ii)

If a COVID-19 test is required by the employer for screening purposes, the employer must provide the test to each employee at no cost to the employee.

1910.502(l)(2)

Employee notification to employer of COVID-19 illness or symptoms. The employer must require each employee to promptly notify the employer when the employee:

1910.502(l)(2)(i)

Is COVID-19 positive (*i.e.*, confirmed positive test for, or has been diagnosed by a licensed healthcare provider with, COVID-19); or

1910.502(l)(2)(ii)

Has been told by a licensed healthcare provider that they are suspected to have COVID-19; or

1910.502(l)(2)(iii)

Is experiencing recent loss of taste and/or smell with no other explanation; or

1910.502(l)(2)(iv)

Is experiencing both fever (≥100.4 °F) and new unexplained cough associated with shortness of breath.

1910.502(l)(3)

Employer notification to employees of COVID-19 exposure in the workplace.

1910.502(l)(3)(i)

Except as provided for in paragraph (l)(3)(iii) of this section, when the employer is notified that a person who has been in the workplace(s) (including employees, clients, patients, residents, vendors, contractors, customers, delivery people and other visitors, or other non-employees) is COVID-19 positive, the employer must, within 24 hours:

1910.502(l)(3)(i)(A)

Notify each employee who was not wearing a respirator and any other required PPE and has been in close contact with that person in the workplace. The notification must state the fact that the employee was in close contact with someone with COVID-19 along with the date(s) that contact occurred.

1910.502(l)(3)(i)(B)

Notify all other employees who were not wearing a respirator and any other required PPE and worked in a well-defined portion of a workplace (*e.g.*, a particular floor) in which that person was present during the potential transmission period. The potential transmission period runs from 2 days before the person felt sick (or, for asymptomatic people, 2 days prior to test specimen collection) until the time the person is isolated. The notification must specify the date(s) the person with COVID-19 was in the workplace during the potential transmission period.

1910.502(l)(3)(i)(C)

Notify other employers whose employees were not wearing respirators and any other required PPE and have been in close contact with that person, or worked in a well-defined portion of a workplace (*e.g.*, a particular floor) in which that person was present, during the potential transmission period. The potential transmission period runs from 2 days before the person felt sick (or, for asymptomatic people, 2 days prior to test specimen collection) until the time the person is isolated. The notification must specify the date(s) the person with COVID-19 was in the workplace during the potential transmission period and the location(s) where the person with COVID-19 was in the workplace.

1910.502(l)(3)(ii)

The notifications required by paragraph (l)(3)(i) of this section must not include any employee's name, contact information (*e.g.*, phone number, email address), or occupation.

1910.502(l)(3)(iii)

The notification provisions are not triggered by the presence of a patient with confirmed COVID-19 in a workplace where services are normally provided to suspected or confirmed COVID-19 patients (*e.g.*, emergency rooms, urgent care facilities, COVID-19 testing sites, COVID-19 wards in hospitals).

1910.502(l)(4)

Medical removal from the workplace.

1910.502(l)(4)(i)

If the employer knows an employee meets the criteria listed in paragraph (l)(2)(i) of this section, then the employer must immediately remove that employee and keep the employee removed until they meet the return to work criteria in paragraph (l)(6) of this section.

1910.502(l)(4)(ii)

If the employer knows an employee meets the criteria listed in paragraphs (l)(2)(ii) through (iv) of this section, then the employer must immediately remove that employee and either:

1910.502(l)(4)(ii)(A)

Keep the employee removed until they meet the return to work criteria in paragraph (l)(6) of this section; or

1910.502(l)(4)(ii)(B)

Keep the employee removed and provide a COVID-19 polymerase chain reaction (PCR) test at no cost to the employee.

1910.502(l)(4)(ii)(B)(1)

If the test results are negative, the employee may return to work immediately.

1910.502(l)(4)(ii)(B)(2)

If the test results are positive, the employer must comply with paragraph (l)(4)(i) of this section.

1910.502(l)(4)(ii)(B)(3)

If the employee refuses to take the test, the employer must continue to keep the employee removed from the workplace consistent with paragraph (l)(4)(ii)(A) of this section, but the employer is not obligated to provide medical removal protection benefits in accordance with paragraph (l)(5)(iii) of this section. Absent undue hardship, employers must make reasonable accommodations for employees who cannot take the test for religious or disability-related medical reasons.

Note to paragraph (l)(4)(ii):

This partial symptom list in paragraphs (l)(2)(iii) and (l)(2)(iv) of this section informs the employer of the minimum requirements for compliance. The full list of COVID-19 symptoms provided by CDC includes additional

symptoms not listed in paragraphs (l)(2)(iii) through (iv) of this section. Employers may choose to remove or test employees with additional symptoms from the CDC list, or refer the employees to a healthcare provider.

1910.502(l)(4)(iii)

1910.502(l)(4)(iii)(A)

If the employer is required to notify the employee of close contact in the workplace to a person who is COVID-19 positive in accordance with paragraph (l)(3)(i)(A) of this section, then the employer must immediately remove that employee and either:

1910.502(l)(4)(iii)(A)(1)

Keep the employee removed for 14 days; or

1910.502(l)(4)(iii)(A)(2)

Keep the employee removed and provide a COVID-19 test at least five days after the exposure at no cost to the employee.

1910.502(l)(4)(iii)(A)(2)(i)

If the test results are negative, the employee may return to work after seven days following exposure.

1910.502(l)(4)(iii)(A)(2)(ii)

If the test results are positive, the employer must comply with paragraph (l)(4)(i) of this section.

1910.502(l)(4)(iii)(A)(2)(iii)

If the employee refuses to take the test, the employer must continue to keep the employee removed from the workplace consistent with paragraph (l)(4)(iii)(A)(*1*) of this section, but the employer is not obligated to provide medical removal protection benefits in accordance with paragraph (l)(5)(iii) of this section. Absent undue hardship, employers must make reasonable accommodations for employees who cannot take the test for religious or disability-related medical reasons, consistent with applicable non-discrimination laws.

1910.502(l)(4)(iii)(B)

Employers are not required to remove any employee who would otherwise be required to be removed under paragraph (i)(4)(iii)(A) of this section if the employee does not experience the symptoms in paragraph (l)(2)(iii) or (iv) of this section and has:

1910.502(l)(4)(iii)(B)(1)

Been fully vaccinated against COVID-19 (*i.e.*, 2 weeks or more following the final dose); or

1910.502(l)(4)(iii)(B)(2)

Had COVID-19 and recovered within the past 3 months.

1910.502(l)(4)(iv)

Any time an employee is required to be removed from the workplace for any reason under paragraph (l)(4) of this section, the employer may require the employee to work remotely or in isolation if suitable work is available.

1910.502(l)(5)

Medical removal protection benefits.

1910.502(l)(5)(i)

Employers with 10 or fewer employees on the effective date of this section are not required to comply with paragraphs (l)(5)(iii) through (iv) of this section.

1910.502(l)(5)(ii)

When an employer allows an employee to work remotely or in isolation in accordance with paragraph (l)(4)(iv) of this section, the employer must continue to pay the employee the same regular pay and benefits the employee would have received had the employee not been absent from work, until the employee meets the return to work criteria specified in paragraph (l)(4)(iii) or (l)(6) of this section.

1910.502(l)(5)(iii)

When an employer removes an employee in accordance with paragraph (l)(4) of this section:

1910.502(l)(5)(iii)(A)

The employer must continue to provide the benefits to which the employee is normally entitled and must also pay the employee the same regular pay the employee would have received had the employee not been absent from work, up to $1,400 per week, until the employee meets the return to work criteria specified in paragraph (l)(4)(iii) or (l)(6) of this section.

1910.502(l)(5)(iii)(B)

For employers with fewer than 500 employees, the employer must pay the employee up to the $1,400 per week cap but, beginning in the third week of an employee's removal, the amount is reduced to only two-thirds of the same regular pay the employee would have received had the employee not been absent from work, up to $200 per day ($1,000 per week in most cases).

1910.502(l)(5)(iv)

The employer's payment obligation under paragraph (l)(5)(iii) of this section is reduced by the amount of compensation that the employee receives from any other source, such as a publicly or employer-funded compensation program (*e.g.*, paid sick leave, administrative leave), for earnings lost during the period of removal or any additional source of income the employee receives that is made possible by virtue of the employee's removal.

1910.502(l)(5)(v)

Whenever an employee returns to the workplace after a COVID-19-related workplace removal, that employee must not suffer any adverse action as a result of that removal from the workplace and must maintain all employee rights and benefits, including the employee's right to their former job status, as if the employee had not been removed.

1910.502(l)(6)

Return to work. The employer must make decisions regarding an employee's return to work after a COVID-19-related workplace removal in accordance with guidance from a licensed healthcare provider or CDC's "Isolation Guidance" (incorporated by reference, § 1910.509); and CDC's "Return to Work Healthcare Guidance" (incorporated by reference, § 1910.509).

Note to paragraph (l):
OSHA recognizes that CDC's "Strategies to Mitigate Healthcare Personnel Staffing Shortages" (available at *www.cdc.gov/coronavirus/2019-ncov/hcp/mitigating-staff-shortages.html*) allows elimination of quarantine for certain healthcare workers, but only as a last resort, if the workers' absence would mean there are no longer enough staff to provide safe patient care, specific other amelioration strategies have already been tried, patients have been notified, and workers are utilizing additional PPE at all times.

1910.502(m)

Vaccination. The employer must support COVID-19 vaccination for each employee by providing reasonable time and paid leave (*e.g.*, paid sick leave, administrative leave) to each employee for vaccination and any side effects experienced following vaccination.

1910.502(n)

Training.

1910.502(n)(1)

The employer must ensure that each employee receives training, in a language and at a literacy level the employee understands, and so that the employee comprehends at least the following:

1910.502(n)(1)(i)

COVID-19, including how the disease is transmitted (including pre-symptomatic and asymptomatic transmission), the importance of hand hygiene to reduce the risk of spreading COVID-19 infections, ways to reduce the risk of spreading COVID-19 through the proper covering of the nose and mouth, the signs and symptoms of the disease, risk factors for severe illness, and when to seek medical attention;

1910.502(n)(1)(ii)

Employer-specific policies and procedures on patient screening and management;

1910.502(n)(1)(iii)

Tasks and situations in the workplace that could result in COVID-19 infection;

1910.502(n)(1)(iv)

Workplace-specific policies and procedures to prevent the spread of COVID-19 that are applicable to the employee's duties (*e.g.*, policies on Standard and Transmission-Based Precautions, physical distancing, physical barriers, ventilation, aerosol-generating procedures);

1910.502(n)(1)(v)

Employer-specific multi-employer workplace agreements related to infection control policies and procedures, the use of common areas, and the use of shared equipment that affect employees at the workplace;

1910.502(n)(1)(vi)
Employer-specific policies and procedures for PPE worn to comply with this section, including:

1910.502(n)(1)(vi)(A)
When PPE is required for protection against COVID-19;

1910.502(n)(1)(vi)(B)
Limitations of PPE for protection against COVID-19;

1910.502(n)(1)(vi)(C)
How to properly put on, wear, and take off PPE;

1910.502(n)(1)(vi)(D)
How to properly care for, store, clean, maintain, and dispose of PPE; and

1910.502(n)(1)(vi)(E)
Any modifications to donning, doffing, cleaning, storage, maintenance, and disposal procedures needed to address COVID-19 when PPE is worn to address workplace hazards other than COVID-19;

1910.502(n)(1)(vii)
Workplace-specific policies and procedures for cleaning and disinfection;

1910.502(n)(1)(viii)
Employer-specific policies and procedures on health screening and medical management;

1910.502(n)(1)(ix)
Available sick leave policies, any COVID-19-related benefits to which the employee may be entitled under applicable federal, state, or local laws, and other supportive policies and practices (*e.g.*, telework, flexible hours);

1910.502(n)(1)(x)
The identity of the safety coordinator(s) specified in the COVID-19 plan;

1910.502(n)(1)(xi)
The requirements of this section; and

1910.502(n)(1)(xii)
How the employee can obtain copies of this section and any employer-specific policies and procedures developed under this section, including the employer's written COVID-19 plan, if required.

Note to paragraph (n)(1):
Employers may rely on training completed prior to the effective date of this section to the extent that it meets the relevant training requirements under this paragraph.

1910.502(n)(2)

The employer must ensure that each employee receives additional training whenever:

1910.502(n)(2)(i)

Changes occur that affect the employee's risk of contracting COVID-19 at work (*e.g.*, new job tasks);

1910.502(n)(2)(ii)

Policies or procedures are changed; or

1910.502(n)(2)(iii)

There is an indication that the employee has not retained the necessary understanding or skill.

1910.502(n)(3)

The employer must ensure that the training is overseen or conducted by a person knowledgeable in the covered subject matter as it relates to the employee's job duties.

1910.502(n)(4)

The employer must ensure that the training provides an opportunity for interactive questions and answers with a person knowledgeable in the covered subject matter as it relates to the employee's job duties.

1910.502(o)

Anti-Retaliation.

1910.502(o)(1)

The employer must inform each employee that:

1910.502(o)(1)(i)

Employees have a right to the protections required by this section; and

1910.502(o)(1)(ii)

Employers are prohibited from discharging or in any manner discriminating against any employee for exercising their right to the protections required by this section, or for engaging in actions that are required by this section.

1910.502(o)(2)

The employer must not discharge or in any manner discriminate against any employee for exercising their right to the protections required by this section, or for engaging in actions that are required by this section.

Note to paragraph (o):

In addition, section 11(c) of the OSH Act also prohibits the employer from discriminating against an employee for exercising rights under, or as a result of actions that are required by, this section. That provision of the Act also protects the employee who files a safety and health complaint, or otherwise exercises any rights afforded by the OSH Act.

1910.502(p)

Requirements implemented at no cost to employees. The implementation of all requirements of this section, with the exception of any employee self-monitoring conducted under paragraph (l)(1)(i) of this section, must be at no cost to employees.

1910.502(q)

Recordkeeping -

1910.502(q)(1)

Small employer exclusion. Employers with 10 or fewer employees on the effective date of this section are not required to comply with paragraph (q)(2) or (q)(3) of this section.

1910.502(q)(2)

Required records. Employers with more than 10 employees on the effective date of this section must:

1910.502(q)(2)(i)

Retain all versions of the COVID-19 plan implemented to comply with this section while this section remains in effect.

1910.502(q)(2)(ii)

Establish and maintain a COVID-19 log to record each instance identified by the employer in which an employee is COVID-19 positive, regardless of whether the instance is connected to exposure to COVID-19 at work.

1910.502(q)(2)(ii)(A)

The COVID-19 log must contain, for each instance, the employee's name, one form of contact information, occupation, location where the employee worked, the date of the employee's last day at the workplace, the date of the positive test for, or diagnosis of, COVID-19, and the date the employee first had one or more COVID-19 symptoms, if any were experienced.

1910.502(q)(2)(ii)(B)

The information in the COVID-19 log must be recorded within 24 hours of the employer learning that the employee is COVID-19 positive and must be maintained as though it is a confidential medical record and must not be disclosed except as required by this ETS or other federal law.

1910.502(q)(2)(ii)(C)

The COVID-19 log must be maintained and preserved while this section remains in effect.

Note to paragraph (q)(2)(ii):

The COVID-19 log is intended to assist employers with tracking and evaluating instances of employees who are COVID-19 positive without regard to whether those employees were infected at work. The tracking will help evaluate potential workplace exposure to other employees.

1910.502(q)(3)

Availability of records. By the end of the next business day after a request, the employer must provide, for examination and copying:

1910.502(q)(3)(i)
All versions of the written COVID-19 plan to all of the following: Any employees, their personal representatives, and their authorized representatives.

1910.502(q)(3)(ii)
The individual COVID-19 log entry for a particular employee to that employee and to anyone having written authorized consent of that employee.

1910.502(q)(3)(iii)
A version of the COVID-19 log that removes the names of employees, contact information, and occupation, and only includes, for each employee in the COVID-19 log, the location where the employee worked, the last day that the employee was at the workplace before removal, the date of that employee's positive test for, or diagnosis of, COVID-19, and the date the employee first had one or more COVID-19 symptoms, if any were experienced, to all of the following: Any employees, their personal representatives, and their authorized representatives.

1910.502(q)(3)(iv)
All records required to be maintained by this section to the Assistant Secretary.

Note to paragraph (q):
Employers must continue to record all work-related confirmed cases of COVID-19 on their OSHA Forms 300, 300A, and 301, or the equivalent forms, if required to do so under 29 CFR part 1904.

1910.502(r)
Reporting COVID-19 fatalities and hospitalizations to OSHA.

1910.502(r)(1)
The employer must report to OSHA:

1910.502(r)(1)(i)
Each work-related COVID-19 fatality within 8 hours of the employer learning about the fatality.

1910.502(r)(1)(ii)
Each work-related COVID-19 in-patient hospitalization within 24 hours of the employer learning about the in-patient hospitalization.

1910.502(r)(2)
When reporting COVID-19 fatalities and in-patient hospitalizations to OSHA in accordance with paragraph (r)(1) of this section, the employer must follow the requirements in 29 CFR 1904.39, except for 29 CFR 1904.39(a)(1) and (2) and (b)(6).

1910.502(s)
Dates -

1910.502(s)(1)

Effective date. This section is effective as of June 21, 2021.

1910.502(s)(2)

Compliance dates.

1910.502(s)(2)(i)

Employers must comply with all requirements of this section, except for requirements in paragraphs (i), (k), and (n) of this section by July 6, 2021.

1910.502(s)(2)(ii)

Employers must comply with the requirements of this section in paragraphs (i), (k), and (n) of this section by July 21, 2021.

[86 FR 32620-32626, June 21, 2021]

UNITED STATES
DEPARTMENT OF LABOR

Occupational Safety & Health Administration
200 Constitution Ave NW
Washington, DC 20210
800-321-6742 (OSHA)
TTY
www.OSHA.gov

FEDERAL GOVERNMENT

White House
Severe Storm and Flood Recovery Assistance
Disaster Recovery Assistance
DisasterAssistance.gov
USA.gov
No Fear Act Data
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OCCUPATIONAL SAFETY & HEALTH

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Date
28 juin/Jun 2022
Votre référence - Your File
Notre référence - Our File
2029297 (0)

DSR KARIS CONSULTING INC.
1292
95TH ST
S9A 0G2
NORTH BATTLEFORD
SASKATCHEWAN
S9A0G2

Attention: Dale James Richardson

Marque de commerce - Trademark
Engineering Reimagined

Requérant - Applicant
DSR KARIS CONSULTING INC.

Opposant - Opponent
Engineers Canada/Ingénieurs Canada

La demande d'enregistrement de la marque de commerce mentionnée en rubrique fait l'objet d'une opposition en vertu de l'article 38 de la *Loi sur les marques de commerce*, par l'opposant identifié ci-dessus. Par la présente, le registraire des marques de commerce vous fait parvenir la déclaration d'opposition de l'opposant.

Afin de contester la demande d'enregistrement de cette marque de commerce vous (ou l'agent de marque de commerce qui vous représente) êtes tenu de produire une contre-déclaration auprès du registraire des marques de commerce et d'en signifier une copie à l'agent de l'opposant (ou à défaut de ce dernier, à l'opposant lui-même) DANS LES DEUX MOIS suivant la date d'émission du présent avis (voir l'article 38(7) de la *Loi sur les marques de commerce* et l'article 47 du *Règlement sur les marques de commerce*).

À DÉFAUT DE PRODUIRE ET DE SIGNIFIER une contre-déclaration dans le délai prescrit, la demande d'enregistrement de la marque de commerce sera réputée abandonnée en vertu de l'article 38(11) de la *Loi sur les marques de commerce*, sans autre préavis.

The application for registration of the above-referenced trademark has been opposed under section 38 of the *Trademarks Act* by the opponent identified above. By this notice, the Registrar of Trademarks is forwarding you the opponent's statement of opposition.

In order to defend this application for registration of the trademark you (or the trademark agent that is representing you) are required to file a counter statement with the Registrar of Trademarks and serve a copy on the opponent's trademark agent (or if the opponent does not have a trademark agent, serve it on the opponent) WITHIN TWO MONTHS from the date of this notice (see section 38(7) of the *Trademarks Act* and section 47 of the *Trademarks Regulations*).

IF YOU FAIL TO FILE AND SERVE a counter statement within the prescribed time, this trademark application will be deemed to have been abandoned under section 38(11) of the *Trademarks Act*, without any further notice.

Au cours de la procédure d'opposition, les parties seront tenues de signifier certains documents conformément aux dispositions relatives à la signification prévues dans le *Règlement sur les marques de commerce*. Le requérant peut, à moins d'avoir nommé un agent de marques de commerce, indiquer soit dans la contre-déclaration visée à l'article 38(7) de la *Loi sur les marques de commerce*, soit dans un avis distinct produit auprès du registraire et signifié à l'opposant, le nom et l'adresse, **au Canada**, d'une personne ou d'une firme à qui tout document concernant l'opposition peut être signifié avec le même effet que s'il lui était signifié.

Il est à noter que les procédures d'opposition sont de nature quasi-judiciaires impliquent des questions complexes de droit et de faits et des procédures administratives. Il est donc recommandé à toute partie à une procédure d'opposition de retenir les services d'un agent de marques de commerce agréé qui pratique dans le domaine du droit des marques canadien. Étant donné que le registraire agit à titre d'arbitre impartial dans la procédure en cause, le registraire n'est pas en mesure d'aider l'une ou l'autre des parties.

Pour plus d'information concernant la pratique du registraire relativement à la procédure d'opposition, veuillez consulter l'énoncé de pratique intitulé *Pratique concernant la procédure d'opposition en matière de marque de commerce* disponible sur le site web de l'Office de la propriété intellectuelle du Canada à *www.opic.gc.ca*.

Veuillez agréer nos salutations distinguées.

Over the course of the opposition proceeding, the parties will be required to serve certain documents in accordance with the service provisions set out in the *Trademarks Regulations*. An applicant may, unless it has appointed a trademark agent, set out in its counter statement under section 38(7) of the *Trademarks Act*, or may file with the Registrar and serve on the opponent a separate notice setting out, the name and address **in Canada** of a person or firm on whom service of any document in respect of the opposition may be made with the same effect as if it had been served on the applicant.

The applicant should note that opposition proceedings are quasi-judicial in nature and involve complex issues of law and fact and administrative procedures. It is therefore recommended that parties to an opposition proceeding consult with a registered trademark agent with experience in Canadian trademark law. As the Registrar acts as an impartial adjudicator in the subject proceeding, the Registrar is unable to assist either party.

For further information regarding the Registrar's practice with respect to opposition proceedings, please consult the practice notice entitled *Practice in trademark opposition proceedings* available on the Canadian Intellectual Property Office's website at *www.cipo.gc.ca*.

Yours truly,

Pour renseignements / For information
opic.ic.gc.ca / cipo.gc.ca
819-997-7300

Commission des oppositions / Opposition Board
pour le / for
Registraire des marques de commerce
Registrar of Trademarks

cc: MACERA & JARZYNA LLP
P.O. Box 2088
Station D
Ottawa
ONTARIO K1P 5W3

Ref: C17-565

STATEMENT OF OPPOSITION

Processed: June 22,2022 08:29:49
Transmission identification: macjar42820220621113900000_SO_ES10342600
Electronic application timestamp: June 21,2022 11:39:00

Canadian Intellectual Property Office
Place du Portage 1
50 Victoria Street
Gatineau, QC K1A 0C9
Canada

Trademark details
Trademark: Engineering Reimagined
Application number: 2029297
Extension counter: 0
Status: Advertised
Advertised date: 2022-04-27
Current deadline: 2022-06-27

Applicant
Applicant name: DSR KARIS CONSULTING INC.
Address of the applicant: 1292 95TH ST S9A 0G2 NORTH BATTLEFORD, SK S9A0G2 CANADA
Telephone number: 3064417010

Opponent
Opponent name: Engineers Canada/Ingénieurs Canada
Type: Organization
Address: Suite 300, 55 Metcalfe Street, Ottawa, ON K1P 6L5 CANADA
Correspondence address: P.O. Box 2088, Station D, Ottawa, ON K1P 5W3 CANADA
Address for service in Canada: 715-11 Holland Ave, Ottawa, ON K1Y 4S1 CANADA
Language of correspondence: English
Name of the appointed trademark agent OR name of the firm at which all trademark agents are appointed: MACERA & JARZYNA LLP
Address of the agent: P.O. Box 2088 Station D , Ottawa, ON K1P5W3 CANADA
Phone number of the agent: 613-238-8173
Agent's reference number: C17-565
Attention to: Amy M. Thomas

Request submitted by
Name of the appointed trademark agent OR name of the firm at which all trademark agents are appointed: MACERA & JARZYNA LLP
Address of the agent: P.O. Box 2088 Station D , Ottawa, ON K1P5W3 CANADA
Phone number of the agent: 613-238-8173
Agent's reference number: C17-565
Attention to: Amy M. Thomas
Name of the individual trademark agent (not firm) submitting this correspondence: Amy M. Thomas

Request details

The grounds of opposition are as follows:

38(2)(a): The application does not conform to the requirements of section 30(2), without taking into account if it meets the requirement in section 30(3)

Section 30(2)(a): The application does not contain a statement in ordinary commercial terms of the goods or services in association with which the trademark is used or proposed to be used.
The following goods or services are not specified in ordinary commercial terms:
Architectural design; chemical engineering; civil engineering drawing services; construction drafting; consultancy in the field of software design; design and development of computer hardware; design and development of computer hardware and software; design and development of computer hardware for the manufacturing industries; design and development of computer software; design and development of computers; design and development of computers and programs for computers; design and development of wireless computer networks; design and testing of new products for others; design and writing of computer software; design of computer hardware; design of computers; design of computers for others; design of geological surveys; design of integrated circuits; design of mobile telephones; design of optical and micro optical components; design sketching of packaging containers; design, development and implementation of software; design, development, installation and maintenance of computer software; design, installation, updating and maintenance of computer software; design, maintenance, development and updating of computer software; design, planning and engineering of compressed-air stations; designing of computer hardware; designing of packaging and wrapping materials; development of computer programs recorded on software designed for use in construction and automated manufacturing (cad/cam); drafting and development of photovoltaic systems; drafting of construction plans for recreation premises; drafting services; engineering surveying services; industrial and graphic art design; industrial design; mechanical engineering; product design consulting services; product packaging design services; research pertaining to mechanical engineering; sanitation engineering; software design and development; technical consulting in the field of aerospace engineering; tool design

38(2)(a.1): The application was filed in bad faith

The application is being opposed on this ground for the following reason(s):
Pursuant to Section 38(2)(a.1) of the Act, and the facts set out herein, the Application was filed in bad faith since use of the term ENGINEERING is closely regulated in Canada. Engineers require a licence in each province or territory where they practice. The Applicant has applied for a Trademark registration that it may use throughout Canada, when it knows, or ought to have known, the use is deceptive and misleading as the Applicant is not licensed or authorized to practice engineering anywhere in Canada.

There is business legislation, both federal and provincial, that restricts the use of professional titles in a name. A list of a sampling of these statutes and the relevant section numbers is attached hereto in Schedule A.

38(2)(b): The trademark is not registrable

Section 12(1)(b): The trademark is not registrable because whether depicted, written or sounded, it is either clearly descriptive or deceptively misdescriptive in the English or French language of:

A: the character or quality of the goods or services in association with which it is used or proposed to be used
B: the conditions of or the persons employed in the production of the goods or services
C: the place of origin of the goods or services

A: the character or quality of the goods or services in association with which it is used or proposed to be used
B: the conditions of or the persons employed in the production of the goods or services

List the goods or services to which your option(s) applies:
Architectural design; chemical engineering; civil engineering drawing services; construction drafting; consultancy in the field of software design; design and development of computer hardware; design and development of computer hardware and software; design and development of computer hardware for the manufacturing industries; design and development of computer software; design and development of computers; design and development of computers and programs for computers; design and development of wireless computer networks; design and testing of new products for others; design and writing of computer software; design of computer hardware; design of computers; design of computers for others; design of geological surveys; design

of integrated circuits; design of mobile telephones; design of optical and micro optical components; design sketching of packaging containers; design, development and implementation of software; design, development, installation and maintenance of computer software; design, installation, updating and maintenance of computer software; design, maintenance, development and updating of computer software; design, planning and engineering of compressed-air stations; designing of computer hardware; designing of packaging and wrapping materials; development of computer programs recorded on software designed for use in construction and automated manufacturing (cad/cam); drafting and development of photovoltaic systems; drafting of construction plans for recreation premises; drafting services; engineering surveying services; industrial and graphic art design; industrial design; mechanical engineering; product design consulting services; product packaging design services; research pertaining to mechanical engineering; sanitation engineering; software design and development; technical consulting in the field of aerospace engineering; tool design

Language selected in which the trademark is either descriptive or deceptively misdescriptive:
English

Additional information:
EC/IC is a federation of the statutory provincial and territorial Engineering Regulators, as follows:

Engineers and Geoscientists British Columbia
Association of Professional Engineers and Geoscientists of Alberta (APEGA)
Engineers Geoscientists Manitoba
Engineers and Geoscientists New Brunswick
Association of Professional Engineers and Geoscientists of Saskatchewan (APEGS)
Engineers Nova Scotia
Engineers PEI
Engineers Yukon
Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists (NAPEG)
Ordre des ingénieurs du Québec (OIQ)
Professional Engineers and Geoscientists of Newfoundland and Labrador (PEGNL)
Professional Engineers Ontario (PEO)

ENGINEERING is a regulated profession in Canada. The Engineering Regulators, and statutes enacted by the legislatures of every province and territory, regulate who is qualified to carry on the practice of engineering within the respective provinces and territories. In order to qualify to practice engineering in Canada, an individual and/or a company must meet very stringent educational and professional standards.

The use of the term ENGINEERING is also regulated by provincial and territorial statutes. No person or corporation, including the Applicant, is permitted to represent, expressly or by implication, that they are entitled to engage in the practice of engineering or are licensed members of the engineering profession, in any jurisdiction in Canada unless they are, in fact, licensed to practice engineering within that jurisdiction. A list of these statutes and the relevant section numbers is attached hereto in Schedule A.

ENGINEERING refers to the profession of engineering and to the practice of engineering by members of the engineering profession.

The services included in application no. 2,029,297 fall within the types of services provided by professional engineers including, but not limited to, the services provided by architectural engineers, chemical engineers, construction engineers, electrical engineers, software engineers, consulting engineers, civil engineers, sanitation engineers, computer engineers and aerospace engineers.

To the knowledge of the Opponent, the Applicant is not itself registered to practice engineering in any jurisdiction in Canada, nor does the Applicant employ professional engineers licensed in any jurisdiction in Canada to engage in the practice of engineering or in the provision of its services.

Persons or companies not qualified to engage in the practice of engineering within a given province or territory, but implying, through the use of an engineering designation in their name, title or trademark that they are so qualified pose a threat to public safety and welfare.

Pursuant to Section 38(2)(b) of the Act, and the facts set out herein, the Application does not comply with s.12(1)(b) in that the Trademark is clearly descriptive or deceptively misdescriptive of the character or quality of the

services with which it is used or proposed to be used, or of the conditions of, or the persons employed in their production? In view of the fact that the Trademark includes the term ENGINEERING which is regulated in Canada, it follows that:

i) if members of the profession of engineering in Canada are involved in the production of the services, then the Trademark is clearly descriptive of both the character and quality of the services and of the persons employed in their production;

ii) if members of the profession of engineering in Canada are not involved in the production of the services, then the Trademark is deceptively misdescriptive of both the character and quality of the services and of the persons employed in their production.

Section 12(1)(e): The trademark is not registrable because it is a sign or combination of signs whose adoption is prohibited by sections 9 or 10.

The adoption of the trademark is prohibited by section 10.

The trademark has become recognized as designating the following with respect to the goods and services with which it is associated:
kind, value, quality

Additional information:
Pursuant to Section 38(2)(b), and the facts set out herein, the Trademark is not registrable as it contravenes Section 12(1)(e) by being a sign or combination of signs whose adoption is prohibited by Section 10. ENGINEERING by ordinary and bona fide commercial usage has become recognized in Canada as designating the kind, quality and value of services provided by licensed engineers. If the Applicant is not licensed or authorized to engage in the practice of engineering in Canada, its use of the Trademark would likely be misleading.

38(2)(d): The trademark is not distinctive

The trademark is not distinctive within the meaning of section 2 of the Trademarks Act for the following reasons:
Pursuant to Section 38(2)(d) of the Act, and the facts set out herein, the Trademark is not distinctive within the meaning of Section 2 in that it does not distinguish nor is it adapted to distinguish the services of the Applicant as described in the Application from the services of others, namely licensed engineers, engineering firms and entities that are licensed or authorized to practice engineering in Canada.

Pursuant to Section 38(2)(d) of the Act and the facts set out herein, the Trademark is not distinctive within the meaning of Section 2, as it is descriptive or misleading. Use of the Trademark by the Applicant suggests that the services of the Applicant are produced, provided, sold, leased, or licensed by individuals or a company licensed to practice engineering in Canada, or that the Applicant is associated with or authorized by the Opponent or the Engineering Regulators listed above.

The Trademark is not distinctive within the meaning of Section 2 in that it is comprised of a commonly used English word "REIMAGINED" and the word ENGINEERING denoting the engineering profession and work of engineers. The combination is a non-distinctive slogan that does not distinguish, nor is it adapted to distinguish the Applicant's goods from those of engineers.

38(2)(e): At the filing date of the application in Canada, determined without taking into account section 34(1), the applicant was not using or did not propose to use the trademark in Canada in association with the goods and services specified in the application

The applicant was not using and did not propose to use the trademark for the following reasons:
The applicant was not using and did not propose to use the trademark in association with the services listed in the Application. The trademark is used or intended to be used by the Applicant as an advertising slogan and it is not used or intended to be used as a trademark in association with any of the Applicant's specific services. By way of example, this is evident from how the Applicant displays the slogan on its website.

38(2)(f): At the filing date of the application in Canada, determined without taking into account section 34(1), the applicant was not entitled to use the trademark in Canada in association with the goods and

The applicant is not entitled to use the trademark in Canada for the following reasons:
At the filing date of the application, the Applicant was not entitled to use the Trademark throughout Canada in association with the services listed in the Application. Given the facts stated herein, the Applicant cannot claim via a trademark registration a monopoly over the word ENGINEERING to the exclusion of other licensed professional engineers and companies permitted to practice engineering in Canada. This group of users is lawfully entitled to use ENGINEERING having been granted a P.Eng or Ing. licence, or a Permit to Practice or Certificate of Authorization from a provincial or territorial Regulator. Persons and entities that are not licensed and do not hold a Permit to Practice or a Certificate of Authorization from one of the Regulators are not entitled to use ENGINEERING in their names, advertising or as a trademark.

Attached file(s):
Schedule A.pdf (674KB)

Submission date: 2022-06-21
Submission time: 11:39:00 EDT

Schedule A

Jurisdiction	Act	Pertinent Sections
Ontario	*Professional Engineers Act,* RSO 1990, c P.28	Sections 12(1), 12 (2), 40(1), 40(3)
Quebec	*Engineers Act*, CQLR, c I-9	Sections 22(2), 26
Quebec	*Professional Code,* CQLR, c C-26	Sections 32, 188, 188.1
Manitoba	*The Engineering and Geoscientific Professions Act,* CCSM, c E120	Sections 57(b), 58(1), 58(2)
Saskatchewan	*The Engineering and Geoscience Professions Act,* SS 1996, c E-9.3	Section 26(1), 26(3)
Alberta	*Engineering and Geoscience Professions Act,* RSA 2000, c E-11	Section 3(1)
British Columbia	*Professional Governance Act*, SBC 2018, c 47	Section 52(1), 52(3) 106(1), 106(2)
Northwest Territories	*Engineering and Geoscience Professions Act,* SNWT 2006, c 16	Section 11(1)
Nunavut	*Engineers and Geoscientists Act,* SNu 2008, c 2	Section 3(1)
Yukon	*Engineering Profession Act,* RSY 2002, c 75	Section 3(1)
Prince Edward Island	*Engineering Profession Act*, RSPEI 1988, c E-8.1	Sections 23(1), 23(2)
Nova Scotia	*Engineering Profession Act,* RSNS 1989, c 148	Sections 20, 21
New Brunswick	*Engineering and Geoscience Professions Act*, SNB 2015, c 9	Sections 17(1), 17(3)
Newfoundland and Labrador	*Engineers and Geoscientists Act, 2008,* SNL 2008, c E-12.1	Sections 15(1), 15(2)

Jurisdiction	Act and pertinent sections
Canada	*Canada Business Corporations Regulations, 2001* SOR/2001-512, s.26(c)
New Brunswick	*Partnerships and Business Names Registration Regulation*, NB Reg 81-35, s. 2(a)(iv)
Quebec	*Professional Code*, CQLR, c C-26, ss. 32, 188, 188.1
Ontario	*Business Corporations Act*, RRO 1990 Reg 62, ss. 15(10) and 16(1)(b)
Manitoba	*Business Names Registration Regulation*, Man Reg 381/87 R, s. 11(1)(e)
Saskatchewan	*The Business Names Registration Act*, RSS 1978, c B-11, s. 8(1)(a)(iv)
Alberta	*Business Corporations Regulation,* Alta Reg 118/2000, s. 14(1)(c)

Counter Statement to Opposition

The Registrar of Trade-marks
Canadian Intelectual Property Office
Opposition Board
Place du Portage
50 Victoria Street
Gatineau, Quebec, K1A 0C9
Fax: 819-953-2476

Applicant
DSR Karis Consulting Inc.
1292 95th Street,
North Battleford, SK
S9A 0G2
Tel: 306-441-7010 (SK), 587-575-5045 (AB)
Fax: 639-630-2551
Email: dale.richardson@dsrkarisconsulting.com

Opponent
Engineers Canada
Suite 300, 55 Metcalfe Street,
Ottawa, ON
K1P 6L5

Agent of Opponent
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PO Box 2088 Station D
Ottawa, ON
K1P 5W3
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In the Matter of an Opposition by Engineers Canada to application No.2029297 DSR Karis Consulting Inc. provides the following counter statement:

1. The applicant for registration of the above trademark, gives notice that the following are the grounds on which he relies as supporting the application.

(a) The opposition is frivolous and vexatious, it is an abuse of process, it is predatory and an ambush by Engineers Canada to punish DSR Karis Consulting Inc. for its participation in protecting the public interest and exposing the criminal neglience of Engineering Canada in

the SARS-Cov-2 pandemic resulting in loss of life; and the Canadian Intellectual Property Office does not have Jurisdiction over the Canada business Corporations Act;

The application was not established that it was made in bad faith. The use of the Canada business corporations regulations was a fraudulent representation of the application of the Canada business regulations. For greater certainty the section of the Canada Business Corporations regulations are listed as well as the Canada Business Corporations Act:

> 26 For the purpose of paragraph 12(1)(a) of the Act, a corporate name is prohibited if it connotes that the corporation
>
> (c) is sponsored or controlled by or is connected with a university or an association of accountants, architects, engineers, lawyers, physicians or surgeons or another professional association recognized by the laws of Canada or a province, unless the appropriate university or professional association consents in writing to the use of the name
>
> 12 (1) A corporation shall not be incorporated or continued as a corporation under this Act with, have, carry on business under or identify itself by a name
>
> (a) that is, as prescribed, prohibited or deceptively misdescriptive; or
>
> (b) that is reserved for another corporation or intended corporation under section 11.

The the Canadian Intellectual Property Office does not have any jurisdiction over the Canada Business Corporations act; nor can it usurp the powers and/or capacity of the Director of Corporations Canada. The corporations name is DSR Karis Consulting Inc., and since the name of the corporation is DSR Karis Consulting Inc., this point is deceptive and moot. Any issue with a federal corporation's name is under the jurisdiction of the *Canada Business Corporations Act* and a matter entirely for the Director of Corporations Canada. ***This is an attempt to use the Canadian Intellectual Property Office to fraudulently exercise jurisdiction it does not posess***. This is not the proper place for a challenge of this nature and this must be dismissed for lack of jurisdiction.

(b) fraud is being used to punish DSR Karis Consulting Inc.

The entire case made by the opposing party falls apart as it is made under the premise of fraud, and fraud is a crime under the criminal code of Canada. Cases relating to the United States and the impact the crimes relating to the fraud and other crimes listed herein are part

of the subject matter of the motive to punish DSR Karis Consulting Inc. for whistlebloing criminal activity in Canada and the United States. The cases related to these matters are as follows:

- T-1404-20, Federal Court of Canada (Active)
- T-1403-20, Federal Court of Canada
- T-1367-20, Federal Court of Canada (Active)
- T-1229-20, Federal Court of Canada
- T-1115-20, Federal Court of Canada
- A-.158-22 Federal Court of Appeal (Active)
- A-221-21 Federal Court of Appeal (Active)
- A-239-21 Federal Court of Appeal (Active)
- A-277-21 Federal Court of Appeal (Active)
- A-337-21 Federal Court of Appeal (Active)
- CACV4048 Court of Appeal for Saskatchewan (Active)
- CACV3708 Court of Appeal for Saskatchewan
- CACV3717 Court of Appeal for Saskatchewan
- CACV3745 Court of Appeal for Saskatchewan (Active)
- CACV3798 Court of Appeal for Saskatchewan (Active)
- 39960 Supreme Court of Canada
- 39759 Supreme Court of Canada
- DIV 70 of 2020 Court of Queen's Bench of Saskatchewan (Active)
- QBG-156 of 2020 Court of Queen's Bench of Saskatchewan (Active)
- No. 2201 03422 Court of Queen's Bench of Alberta (Active)
- No. 2201 02896 Court of Queen's Bench of Alberta (Active)
- CV-21-58-H-SEH U.S. District Court of Montana (Active)
- No. 21-1365, United States Court of Appeals for the Tenth Circuit
- No. 1:21-CV-02285-GPG, United States District Court for the District of Colorado
- No. 20-1815, Supreme Court of the United States
- No. 1:21-CV-01418-LTB, United States District Court for the District of Colorado
- No. 1:21-CV-01618-LTB, United States District Court for the District of Colorado
- No. 1:21-cv-02208-GPG, United States District Court for the District of Colorado

- No. 1:21-CV-02183-GPG, United States District Court for the District of Colorado
- No. 1.21-cv-02053, United States District court for the District of Colorado
- No. A-21-CV-794-RP, United States District court for the Western District of Texas (Active)
- No. 21-1239, United States Court of Appeals for the Tenth Circuit
- No. 203-820-944, Aurora Colorado Immigration Court
- No. 1:21-CV-01794-GPG, United States District Court for the District of Colorado
- No. 1:21-cv-01794-GPG, United States District Court for the District of Colorado
- No. 2:20-cv-02218-JAD-DJA, United States District Court for the District of Nevada
- No. 21-15402, United States Court of Appeals for the Ninth Circuit
- No. 20-1282, Supreme Court of the United States
- No. _____, Supreme Court of the United States filed December 27 2021 number not yet assigned. (Active)
- OTP-CR-197 22 International Criminal Court (Active)

Several complaints have been made to the following law enforcement agencies

- K-Division of the Royal Canadian Mounted Police (Active)
- F-Division of the Royal Canadian Mounted Police (Active)
- E-Division of the Royal Canadian Mounted Police (Active)
- D-Division of the Royal Canadian Mounted Police (Active)
- O-Division of the Royal Canadian Mounted Police (Active)
- The Federeal Bureau of Investigation (Active)

For Greater Certainty fraud will be linked below:

> **Fraud**
>
> **380 (1)** Every one who, by deceit, falsehood or other fraudulent means, whether or not it is a false pretence within the meaning of this Act, defrauds the public or any person, whether ascertained or not, of any property, money or valuable security or any service,
>
> > **(a)** is guilty of an indictable offence and liable to a term of imprisonment not exceeding fourteen years, where the subject-matter of the offence is a testamentary instrument or the value of the subject-matter of the offence exceeds five thousand dollars; or
> >
> > **(b)** is guilty

> (i) of an indictable offence and is liable to imprisonment for a term not exceeding two years, or
>
> (ii) of an offence punishable on summary conviction,

Since this matter has been brought for the purposes of obtaining the opposition by deceit and falsehood, it will be reported to the appropriate authorities for criminal prosecution. Fraudulent documentation have been created retained and transmitted for the purposes of obtaining the removal of the trademark. This is clear intent to commit fraud and since it is clear that there was more than one party involved it is conspiracy to commit the fraud using the civil branch of the law. The timing of the opposition also demonstrates further conspiracy to the documentation provided to the opposing party by DSR Karis Consulting Inc. named “THE ENGINEERING OF BIOTERRORISM CHILD TRAFFICKING, TREASON AND THE CRIME OF AGGRESSION (A PRELIMINARY REPORT AND ANALYSIS OF RISK)” protected by United States copyright. It is highly probable that waiting to bring this opposition after DSR Karis Consulting Inc. was fraudulently named a litigation proxy by Justice Brown in T-1404-20 of the Federal Court of Canada. That fraudulent ruling made it an opportune time to allow a fraudulent claim to be brought before this tribunal knowing that any appeal would be frustrated by the Federal Court of Canada regardless of the criminal intent of the opposing party.

(c) The use of the trademark is permitted under the trademarks act;

Section 50 of the Trademarks act permits the use of the trademark based on th clear use of the language as linked below:

> **Licence to use trademark**
>
> **50 (1)** For the purposes of this Act, if an entity is licensed by or with the authority of the owner of a trademark to use the trademark in a country and the owner has, under the licence, direct or indirect control of the character or quality of the goods or services, then the use, advertisement or display of the trademark in that country as or in a trademark, trade name or otherwise by that entity has, and is deemed always to have had, the same effect as such a use, advertisement or display of the trademark in that country by the owner.

The opposing party has the onus to demonstrate that DSR Karis Consulting Inc. does not have direct or indirect control of the character or quality of goods or services. The opposing party has provided no such evidence of the same.

(d) the opposing party is trying to use provincial legislation to strike down federal law in a tribunal that lacks the jurisdiction to entertain constitutional challenges to legislation;

The opposing party cannot claim that provincial legislation can override federal legislation with respect to registering trademarks, and cannot seek to limit the jurisdiction of federal legislation with respect to trademarks as that is a matter beyond the scope of a tribunal as it is not of competent jurisdiction to challenge constitutional or jurisdictional matters. This issues is a dispute between provincial and federal statues and best settled in the Federal Court of Canada.

Furthermore, the claim that the trademark is not distinctive is wholly unreasonable as the term “engineering reimagined” is not commonly used any where as a phrase which is how it is intended to be used. The term “engineering reimagined” is clearly defined in documents possessed by the applicant. It is also listed on the internet as to what “engineering reimagined” is. **Engineering reimagined is tied to protecting to public interest and attacking the trade mark will negatively impact the ability of DSR Karis Consulting Inc. from protecting the extemination of human life that Engineers Canada seeks to facilitate by its deliberate criminal intent and shield the foregoing crimes.**

(e) the opposing party is assisting criminal actions of numerous parties who are attempting to destroy DSR Karis Consulting Inc. and its director for acting in the public interest, when the criminals are engaing in the most reprehesible crimes and are attempting to use a tribunal to conceal their criminal activity;

The question at hand is this, why is engineering canada coming after the corporation who is upholding what constitutes good engineering practice that applies to both persons educated as engineers or engineering technologists, when it of itself is not holding itself to its own standards. The opposing party has been provided information as to how poor engineering practice is being used to murder people in Canada and the United States and has not given a response to this pressing matter when the practice of “professional engineering” is to protect the public interest in the scope of its practice. Why were the “professional engineering” regulatory bodies woefully silent on the criminally negligent guidelines used during the SARS-Cov-2 pandemic? Why is it that frivolous, vexatious and immaterial claims are being made against the Applicant of the trademark when it is the sole entity speaking on behalf of the public interest?

It appears that the opposition to the trademark is nothing more than a malicious attack to assist the parties that are trying to destroy DSR Karis Consulting Inc. for protecting the public interest. This opposition will also inform Engineers Canada that they have been reported to 5 Divisions of the RCMP and the FBI by the United States citizen who holds to US Copyright to the materials that were submitted to them for giving aid and comfort to the parties who have been implicated in the crimes listed herein and the documentation provided to them which includes without limitation, **child trafficking for the purposes of sexual and/or financial exploitation, bioterrorism, treason, torture, the crime of aggression, criminal negligence, murder, forgery, mortgage fraud, fraud and crimes against humanity**. Should such a baseless claim be pursued to punish DSR Karis Consulting Inc., it will continue to defend itself and report any such actions that will assist or benefit in any material manner any of the criminals associated with those crimes. Based on the research report provided to Engineers Canada, it would be a better use of its resources to protect the interests of the public and not permit human lives to be exterminated due to poor “engineering” practices.

Furthermore, this claim by Engineers Canada should be thrown out in its entirety as it is a waste of taxpayers resources and it is clearly a colatteral attack that was coordinated with criminals who seek to disrupt the essential services of DSR Karis Consulting Inc. and torture and murder its director for acting with integrity and serving the public interest when acting as its agent.

Engineering Canada is using this tribunal to take actions to support those who are committing actions to commit treason in the United States by hindering the first witness to overt acts of treason against the United States of America, which includes without limitation conspiracy to prevent the enforcement of numerous statutes including without limitation, Article 3 Section 3 of the Constitution of the United States and the Convention against Torture; *Conspiracy to altogether prevent enforcement of statute of United States is conspiracy to commit treason by levying war against the United States*. Bryant v. United States, 257 F. 378, 1919 U.S. App LEXIS 2212(5th Cir. 1919), and since treaties are the supreme law of the land in the United States this case law applies; The violation and prevention of enforcement of numerous

treaties does allow for prosecution in the United States. *Treaty with foreign power was supreme law of land; Congress could provide punishment for its infraction on deprivation of or injury to right secured by it, as in case of ordinary law*. In re Grand Jury (1886, DC Or) 11 Sawy 522, 26 F 749. Based on this established case law on United States federal courts any person violating a treaty could be prosecuted for conspiring to overthrow a statute of the United States. The principles of comity demands that Canada respect United States case law with respect to its treason and what constitutes the overthrow of the United States or else it would be perceived as a hostile act when the Canadian system are protecting actors in Canada supporting treasonous actors in the United States. When actors in Canada are executing the same actions with the support of actors in the United States actively engaged in treasonable conduct, Canada must treat that conduct as treason within its borders and no aid or comfort in any manner can be given to those who are connected in any manner to the aforementioned actions. The actions of all of these parties threaten to severely interfere with the territorial integrity of Canada and the United States, and any overt act that assists the aforementioned inteference will be reported accordingly.

(f) The opposition has been made in extreme bad faith and it is frivolous, vexatious, and malicious and must be dismissed as there is an abundance of evidence to demonstrate the maliciousness of the opponent.

For the reasons listed above and the supporting documentation that will follow, this malicious action that is based on straw man arguments, fraud and intent to unlawfully punish must be dismissed as they have been brought forth in extreme bad faith with ill intent to aid parties engaged in treason in Canada and the United States. This documentation will be provided to the appropriate law enforcement agencies, other entities and to the public to demonstrate the malicious attacks directed at DSR Karis Consulting Inc. for acting within the public interest.

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DSR Karis Consulting Inc.

ENGINEERING REIMAGINED

From: Dale J. Richardson, Director
DSR Karis Consulting Inc. AB Office
116 West Creek Meadow,
Chestermere, AB

November 9, 2022

To: The Registrar of Trademarks
Canadian Intellectual Property Office
Opposition Board
Place du Portage
50 Victoria Street
Gatineau, Quebec K1A 0C9
Fax: 819-953-2476

CC: Amy M. Thomas, Counsel for Engineers Canada
Macera & Jarzyna LLP
PO Box 2088 Station D
Ottawa, ON
K1P 5W3
Tel: 613-218-8173
Fax: 613-235-2508
Email: amy.thomas@moffatco.com, mail@moffatco.com

CC: Royal Canadian Mounted Police

Calgary Police Service

Federal Bureau of Investigation

Regina Police Service

Saskatoon Police Service

Winnipeg Police Service

Ottawa Police Service

Office of the Director of National Intelligence

the Honourable Danielle Smith Premier of Alberta

Re: Demand to Cease and Desist facilitation of/and or complicity to Bioterrorism, Treason, Child Trafficking, Fraud, Mortgage Fraud, Criminal Intimidation, Torture and the distribution of a Biological Weapon used to Interfere with the Territorial Integrity of Canada and the United States in the Opposition Board of the Canadian Intellectual Property Office

Dear Registrar,

DSR Karis Consulting Inc. ("DSR Karis"), a federal corporation extra provincially registered to operate in the province of Alberta and Saskatchewan is presenting to you this attached report "THE ENGINEERING OF BIOTERRORISM, CHILD TRAFFICKING, TREASON AND THE CRIME OF AGGRESSION UPDATE (A PRELIMINARY REPORT AND ANALYSIS OF RISK)". This is an official request to cease and desist the promulgation of the forgoing crimes and any other crimes contained within the documentation within the Opposition Board of the Canadian Intellectual Property Office. The CEO has advised DSR Karis that DSR Karis North Consulting Inc. ("Karis North") a Delaware corporation who is the author of the aforementioned report that is protected by United States copyright has provided the aforementioned documentation for the purposes of evidence in ongoing criminal investigations. A copy of the copyright information is attached to this documentation.

The CEO has advised DSR Karis that on July 13, 2022 that Amy Thomas counsel for Engineers Canada received a previous iteration of the aforementioned report that is protected by United States copyright that outlined substantial criminal activity. The delivery confirmation is attached to this letter. Since Engineers Canada had knowledge of criminal activity that is based on engineering sciences that is the domain of engineers and engineering technologists, Engineers Canada and every other regulatory body in Canada have the utmost obligation to ensure the safety of the public. Attention will be directed to page 7 of the McDonald Affidavit sworn October 19 2022 in particular subsection (b), (d), (e). Understanding local practices and conditions would include not permitting criminal negligence causing death to occur as murdering the public is not part of the local practices and

conditions. Permitting the field of engineering to be used for Bioterrorism, Treason, Child Trafficking, Fraud, Mortgage Fraud, Criminal Intimidation, Torture and the distribution of a Biological Weapon used to Interfere with the Territorial Integrity of Canada and the United States is of the most reprehensible and vile character and the actions of Gerard McDonald demonstrate what is not good character. Lastly section (e) is where the greatest transgression takes place by the CEO of Engineers Canada, Mr. Gerard McDonald. For greater certainty and clarity the section will be linked. "*understand and apply laws and ethical principles that affect the practice of professional engineering both directly and indirectly, and the professional standards to which they are held accountable*". This is a fundamental principle for any person who works in the field of engineering which is made up of both engineers and engineering technologists. There is a great degree of overlap between the work of and engineer and an engineering technologist. Understanding and applying laws and ethical principles apply to any person who works in the field of engineering which includes both engineers and engineering technologists. While there may be some distinction on the responsibility one assumes for work based on the laws governing the field of engineering as a whole, every person is expected to follow laws and ethical standards regardless of professional standing under the law or not. Gerard McDonald and every person who has supported his malicious action to suppress a report that upholds the law and ethical standards demonstrates base criminal intent. These actions are also a clear demonstration of the same ideology observed in the aforementioned report.

Furthermore, Gerard McDonald and his co conspirators are now named as parties in the ongoing investigation as is counsel for Engineers Canada, Amy Thomas. Since the matters raised initially by Amy Thomas fall under the jurisdiction of the Canada Business Corporations Act the opposition was not lawful. Making matters worse, the conduct of Amy Thomas and Gerard McDonald make them directly responsible for criminal negligence causing death in violation of section 219 and 220 of the Criminal Code and every other crime listed in the attached documentation without limitation. For this reason law enforcement has been provided this documentation and now this proceeding is part of a crime and the Canadian Intellectual Property Office has no jurisdiction over criminal law. Therefore the action must be dismissed and given over to law enforcement. Should the Registrar choose to participate in

this gross criminal activity by a competent person who is qualified to speak on the research, then the Registrar of the Canadian Intellectual Property Office will be made subject to the investigation into the foregoing crimes listed in the attached documentation.

Dale J. Richardson

C17-565

IN THE MATTER OF an Opposition by Engineers Canada/Ingénieurs Canada to Trademark Application No. 2,029,297 for the trademark Engineering Reimagined applied for by DSR Karis Consulting Inc.

Affidavit of Gerard McDonald P.Eng., MBA

I, Gerard McDonald, P.Eng., MBA, of the City of Ottawa, in the Province of Ontario, solemnly affirm that:

PERSONAL BACKGROUND AND EXPERIENCE

1. I am the Chief Executive Officer of Engineers Canada/Ingénieurs Canada (hereinafter "Engineers Canada" or "EC"). I have held this position since February 12, 2018. Prior to joining Engineers Canada, I was the Registrar at Professional Engineers Ontario ("PEO") where my responsibilities included the oversight of PEO's regulatory functions with respect to the engineering profession in the province of Ontario. Prior to joining PEO, I worked extensively within the transportation sector in the public service. Marked as **Exhibit 1** is a copy of my curriculum vitae outlining my educational background, training, experience and career as an engineer.

2. I am a civil engineer. Since 1984, I have been continuously licensed to practice engineering in the province of Ontario. I graduated from the University of Waterloo with the degree of Bachelor of Applied Science in Civil Engineering and from the University of Ottawa with the degree of Master of Business Administration.

3. At various times over the course of my career, I have referred to myself (and have been referred to by others) as an engineer, a civil engineer, a professional engineer; and a P.Eng.

4. Except where otherwise indicated, I have personal knowledge of the matters testified to in this affidavit. In whole or in part, this knowledge arises from: my work experience with Engineers Canada and PEO, my previous career experience as an engineer and knowledge of the engineering profession; and upon information I have obtained from accessing and consulting business records prepared and maintained by Engineers Canada in its normal course of business.

GENERAL OVERVIEW OF ENGINEERS CANADA

5. Engineers Canada was established in 1936 as the Dominion of Canada Council of Professional Engineers. In the late 1950s, the organization was renamed as the Canadian Council of Professional Engineers. In 2007, the organization operated under the business name Engineers Canada. In 2014, the official name was changed to Engineers Canada.

6. Engineering is a regulated profession in Canada. Engineers Canada is the national, non-profit organization that serves and supports twelve (12) provincial and territorial associations responsible for regulating the practice of engineering in Canada (hereinafter, the "Engineering Regulators" or "Regulators").

7. The Engineering Regulators act to regulate every aspect of the engineering profession in each of Canada's provinces and territories, including licensing of the 300,000 members of the engineering profession in Canada.

8. Each Regulator has been established under an Act of its provincial or territorial legislature (hereinafter collectively referred to as "the Engineering Statutes") and serves as the licensing authority for engineers within its jurisdiction. A list of the Engineering Statutes that regulate the profession of engineering is marked as **Exhibit 2** to this affidavit.

9. The Engineering Regulators are:

- Engineers and Geoscientists of British Columbia (EGBC)
- Association of Professional Engineers and Geoscientists of Alberta (APEGA)
- Association of Professional Engineers and Geoscientists of Saskatchewan (APEGS)
- Engineers Geoscientists Manitoba
- Professional Engineers Ontario (PEO)
- Ordre des ingénieurs du Québec (OIQ)
- Engineers and Geoscientists New Brunswick
- Engineers Nova Scotia
- Engineers PEI
- Engineers Yukon
- Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists (NAPEG)
- Professional Engineers and Geoscientists of Newfoundland and Labrador (PEGNL)

10. The Engineering Regulators are the only members of Engineers Canada.

11. The Regulators and Engineers Canada work together in order to advance the engineering profession in the public interest of Canadians.

12. Engineers Canada acts as the voice of the Regulators in national and international affairs. In doing so, it coordinates the development of national policies, positions and guidelines on behalf of the engineering profession. Engineers Canada promotes national consistency in the regulatory and licensing practices of its Regulators as well as national and international mobility for engineers.

13. Engineers Canada also promotes national consistency in the educational requirements for future engineers by delivering national programs and guidelines for standards of engineering education. In 1965, Engineers Canada established the Canadian Engineering Accreditation Board ("CEAB") to accredit undergraduate engineering programs on behalf of the Engineering Regulators. Accredited programs provide aspiring engineers with the academic requirements necessary for registration as a professional engineer in Canada. There are currently 299 accredited engineering programs at 44 higher education institutions across Canada.

14. Engineers Canada further delivers guidelines for professional qualifications and professional practice applicable to the engineering profession in Canada. Marked as **Exhibit 3** is a printout of EC's Guidelines Catalogue, listing available guidelines applicable to various aspects of the engineering profession as set by the Regulators. Marked as **Exhibit 4** is a copy of the May 2017 version of EC's *Guideline on Admission to the Practice of Engineering in Canada,* which outlines the requirements for admission to the engineering profession in Canada at that time.

15. International engineering graduates that would like to immigrate to Canada and work as an engineer must be licensed to practice engineering in Canada. In order to do so, they are required to comply with prescribed licensing requirements in the province or territory where they plan to work. Engineers Canada publishes information about this at http://engineerhere.ca ("EngineerHere") which website was launched October 24, 2019. Marked as **Exhibit 5** is a sampling of pages from the EngineerHere website. Prior to October 24, 2019, Engineers Canada provided information for licensure in Canada for international engineering graduates on the "Roadmap to Engineering in Canada" webpage of its website. A sampling of pages from "Roadmap to Engineering in Canada" dated from April 25, 2018 are attached to my affidavit and form part of **Exhibit 5**. Citizenship and Immigration Canada provided funding to Engineers Canada for the development of these web resources. Both web resources outline the stringent requirements for engineering licensure in Canada.

16. In addition to the activities described above, Engineers Canada undertakes numerous research and outreach initiatives in order to promote a greater understanding of the nature, role and contribution of professional engineers and engineering to society. Engineers Canada also engages in federal government relations and national media relation on behalf of, and in consultation with, the Engineering Regulators.

17. Engineers Canada maintains an online portal providing information about the engineering labour market in Canada, including opportunities in various disciplines of engineering. This information resource may be used to interest students and prospective engineers in an engineering career and/or by engineers who are seeking new career opportunities within the engineering profession. This portal may be accessed at http://engscape.engineerscanada.ca.

18. Every March, Engineers Canada organizes National Engineering Month as Canada's largest celebration of engineering excellence. Volunteers from the Regulators host over 500 events to demonstrate the rewarding nature of an engineering career to the Canadian public. During National Engineering Month, the engineering profession reaches out to young Canadians to encourage them to consider engineering as a career choice. This initiative provides an opportunity for students to learn about becoming an engineer, the many disciplines of engineering, how to excel in engineering and to explore which engineering disciplines would best suit their interests and skills. Parents, teachers, students, aspiring engineers and engineers become involved with attending or volunteering at events during National Engineering Month. The Engineers Canada website dedicated to National Engineering Month is found at https://exploreengineering.ca/.

19. In carrying out its objectives and activities, Engineers Canada maintains and uses a website at the domain https://engineerscanada.ca. It also uses social media to disseminate information to a broad audience including: current holders of engineering licenses in Canada; prospective applicants for engineering licenses; prospective engineering students; and members of the general public, such as actual or prospective consumers of engineering services. The social media used by Engineers Canada includes a Twitter account (@EngineersCanada) that has made over 10,000 tweets and has approximately 13,600 followers; a YouTube channel (https://www.youtube.com/user/EngineersCanada); and a Facebook page (https://www.facebook.com/EngineersCanada).

20. Engineers Canada also uses traditional media to educate, and communicate with, the public concerning the role of engineering in society and the engineering profession in Canada. By way of example, marked as **Exhibit 6** is a copy of a specialized insert that was placed in the Globe and Mail in 2008.

21. In 2016, Engineers Canada commissioned Innovative Research Group to conduct a national public opinion survey designed to assess the general public's perception of professional engineers. The survey was conducted online using a sample size of 1,200 Canadians aged 18 years and over who are not licensed as a professional engineer. A copy of the survey report provided to Engineers Canada is marked hereto as **Exhibit 7**. The survey outcome includes the finding that 55% of the persons surveyed defined the word "engineer" as a professional designation.

THE BROAD SCOPE OF ENGINEERING

22. Engineering is the discipline that links scientific discoveries with the practical application of those discoveries to meet the needs of society and to improve quality of life.

23. There are many branches of engineering, including (but not limited to) mechanical, civil, chemical, electrical, computer, industrial and manufacturing engineering. Within the scope of any principal branch of engineering, there are many sub-disciplines and specialized sub-branches focused on specific technologies, products, methods of manufacturing, subject matter or industries.

24. Engineers are educated with respect to basic engineering principles applicable to core disciplines such as mechanical, civil, chemical, and electrical engineering. With further education and practical experience, many engineers go on to acquire more in-depth knowledge and expertise in a particular specialized sub-discipline.

25. Engineering is a far-reaching profession that is continuously expanding. More and more areas of human endeavor require, and are enhanced by, skills of engineers.

26. Engineers Canada defines the practice of professional engineering as:

> "any act of planning, designing, composing, evaluating, advising, reporting, directing or supervising, or managing any of the foregoing that requires the application of engineering principles and that concerns the safeguarding of life, health, property, economic interests, the public welfare or the environment" (the "Definition").

27. As the needs of society change, the number of engineering skills and specialties of engineering continues to grow. As such, the Definition uses an expansive approach in defining the practice of engineering, so as to inherently incorporate new engineering activities as they are created and evolve. Three broad criteria underpin the Definition which, in combination, characterize engineering. These elements are:

> (a) any of various particular intellectual activities or combinations of them,
> (b) the application of engineering principles, and
> (c) safeguarding societal interests.

28. Given the nature of engineering, the number of specialties of engineering practice continues to grow along with the growth of science. It is impossible to list or define all the various specializations within engineering, as there is virtually no limit to the number of words or phrases used to define the areas of specialty practiced by members of the engineering profession, as the number of branches and sub-branches of engineering continues to proliferate and expand.

29. The number of engineering programs accredited by the Canadian Engineering Accreditation Board has increased from 102 in 1965 to 284 in 2021. Similarly, the number of engineering institutions offering accredited engineering programs has grown from 19 in 1965 to 44 in 2022.

30. Employment and Social Development Canada (ESDC) provides an on-line classification of occupations in Canada called the National Occupational Classification (NOC) at https://noc.esdc.gc.ca/Versions/VersionsWelcome/e61a632326614743bfa3607f517aeec7. The NOC is periodically updated.

31. Based on the content of the NOC and my own experience and research, I estimate that there are hundreds of engineering sub-disciplines or specialties within the engineering profession. Marked as **Exhibit 8** is a copy of the Index of Titles from the NOC 2011, as it pertains to the keyword "engineer". Marked as **Exhibit 9** is a copy of the Index of Titles from the NOC 2016, as it pertains to the keyword "engineer".

32. Engineers Canada cross-referenced the NOC codes for various engineering disciplines with accredited programs offered by institutes of higher education in Canada. Marked as **Exhibit 10** is a copy of this cross-reference from Engineers Canada's website from April, 2018.

REGULATION of ENGINEERING: Rigorous Oversight and Licensing

33. The wide scope of engineering disciplines encompasses work and activities that can result in significant injury and damage to persons, property, the environment and economic interests, up to and including loss of life, if engineering is carried out by unqualified persons who lack the requisite education, qualifications and/or practical experience.

34. The importance of public safety in the practice of engineering is illustrated by a historical tragedy known as the Quebec Bridge Collapse. In 1907, a bridge that was intended to be the longest cantilever bridge in the world collapsed into the St. Lawrence River during the course of its construction, as a result of flawed engineering design. Many workers and bystanders were killed. A historical account of the Quebec Bridge Collapse is marked hereto as **Exhibit 11**.

35. As part of the aftermath of the Quebec Bridge Collapse, the stringent professional obligations of an engineer in Canada were symbolized in the form of an Iron Ring which is presented to graduating engineers in order to serve as a reminder that engineers obligate themselves to the highest professionalism and humility of their profession. The Iron Ring is worn on the little finger of the dominant hand and serves as an ongoing symbol of the high moral, ethical and professional commitment made

by those who wear the ring. This tradition of the Canadian engineering profession dates from 1922.

36. The protection of public safety and the overall public interest is the underlying rationale for regulation of the engineering profession in Canada. The Engineering Statutes (listed in Exhibit 2) are enacted to protect the public interest.

37. In order to practice engineering in Canada, a person must hold a licence from the Engineering Regulator in the province or territory where the work occurs.

38. An applicant for an engineering licence must apply to an Engineering Regulator and demonstrate their qualifications, which are carefully scrutinized. The applicant must meet high standards for education, experience and other requirements, before a licence to practice engineering will be granted by an Engineering Regulator.

39. The registration process in Canada is rigorous. There are generally five requirements that must be met, before the applicant will be admitted to the engineering profession. In order to obtain a license to practice engineering, an applicant must:

(a) be academically qualified;

(b) have demonstrated acceptable work experience, including an understanding of local practices and conditions;

(c) be able to communicate in the language of their jurisdiction of practice;

(d) be of good character; and

(e) understand and apply laws and ethical principles that affect the practice of professional engineering both directly and indirectly, and the professional standards to which they are held accountable.

40. Each of the Engineering Statutes mandates that only persons registered and licensed as engineers are authorized to perform engineering services in that province or territory or to designate or hold themselves out as engineers. This requirement is universal – it applies regardless of citizenship or whether the person has been educated in Canada or not.

41. With the exception of the statute applicable in Quebec, the Engineering Statutes also require that entities such as businesses and corporations engaged in the provision of engineering services must also acquire a certificate of authorization, a certificate of compliance or a permit to practice, as applicable.

Engineering Designations are Protected and Use is Governed by Statute

42. When a person is issued a licence to practice engineering by a Regulator, he or she becomes entitled to practice engineering and to identify themselves using protected

designations applicable to the engineering profession. The licences conferred by the Regulators include one or more associated titles which may be lawfully used by a person who has obtained an engineering licence from a Regulator. Those titles include "P.Eng." and "Engineer". Marked as **Exhibit 12** is a table from Engineers Canada's website listing the professional designations and titles associated with professional licences conferred by the Regulators.

43. In Canada, an "engineer" or "ingénieur" is an individual who has been issued a licence to practice engineering by a Regulator after demonstrating that they have the requisite education, skills, knowledge and experience. An engineer is sometimes referred to as a licensed engineer, a registered engineer or a professional engineer.

44. An unlicensed individual with an engineering education (whether obtained in Canada or another country) may do engineering work, but only if his or her work is supervised by a licensed engineer who oversees the work and takes responsibility for it.

45. Engineers are licensed in order to be held accountable to the provinces where they carry out engineering work. All engineers in Canada have a responsibility to protect public safety, the natural environment, and the public's economic interests.

46. In Canada, use of terms that identify the engineering profession such as "engineer" and "engineering" and "P.Eng." are restricted by law. The Engineering Statutes listed in Exhibit 2 all include provisions regarding the use and misuse of these engineering designations. Generally speaking, no person or company can use any title, designation or abbreviation in a manner that will lead to the belief that the person is permitted to engage in the practice of professional engineering in Canada, if that person or company is not properly licensed or authorized to do so. The Table below provides references to the pertinent legislation.

Jurisdiction	Act	Pertinent Sections
Ontario	*Professional Engineers Act*	Sections 12(1), 12 (2), 40(1), 40(3)
Quebec	*Engineers Act*	Sections 22(2), 26
Quebec	*Professional Code*	Sections 32, 188, 188.1
Manitoba	*The Engineering and Geoscientific Professions Act*	Sections 57(b), 58(1), 58(2)
Saskatchewan	*The Engineering and Geoscience Professions Act*	Section 26(1), 26(3)
Alberta	*Engineering and Geoscience Professions Act*	Section 3(1)
British Columbia	*Professional Governance Act*	Section 52(1), 52(3), 106(1), 106(2)
Northwest Territories	*Engineering and Geoscience Professions Act*	Section 11(1)
Nunavut	*Engineers and Geoscientists Act*	Section 3(1)
Yukon	*Engineering Profession Act*	Section 3(1)
Prince Edward Island	*Engineering Profession Act*	Sections 23(1), 23(2)

Jurisdiction	Act	Pertinent Sections
Nova Scotia	*Engineering Profession Act*	Sections 20, 21
New Brunswick	*Engineering and Geoscience Professions Act*	Sections 17(1), 17(3)
Newfoundland and Labrador	*Engineers and Geoscientists Act*	Sections 15(1), 15(2)

47. The importance of restrictions on use of terms such as "P.Eng.", "engineer" and "engineering" by persons not licensed to practice engineering in Canada to the public interest is also reflected by other federal and provincial/territorial statutes and regulations. They include provisions to effectively restrict use of engineering designations to those persons who are properly licensed or qualified. Marked as **Exhibit 13** is a list of some of these provisions.

48. If an unauthorized or unlicensed person performs engineering services, there can be very severe consequences, including personal injury, death and property damage. An example of such an incident is the collapse in 2012 of the Algo Centre Mall in Elliott Lake, Ontario where a person whose engineering licence was under suspension had inspected the structure and declared it to be structurally sound. The building collapsed two months later. The case generated considerable media attention. Marked as **Exhibit 14** is a copy of the story published by CBC News concerning this tragedy.

49. Even where an unlicensed person is not offering or performing engineering services to the public, he or she may not refer to themselves as an "engineer" if he or she is unlicensed. In late 2016, an MP retracted public statements where he had described himself as an "engineer", despite having cancelled his engineering licence. This incident was reported by national media including the CBC, National Post and Toronto Star. Marked as **Exhibit 15** are copies of those media reports along with a PEO Media Release dated November 14, 2016 that includes the MP's letter of apology.

50. The Regulators initiate enforcement activity on a regular basis, as necessary, to prevent misuse of the terms "engineer", "engineering" and "P.Eng." by persons not licensed to practice engineering in Canada. This misuse covers a wide range of actions and behaviours. These include: the misleading application (or forgery) of an engineering stamp to structural drawings; the continued use of a professional title such as "P.Eng." and "engineer" by persons whose engineering licence has been revoked, suspended or surrendered but who continue to offer engineering services to the public; and situations where an individual or business attempts to appropriate the credibility associated with an engineering professional title in order to advertise, market, offer or perform engineering work, even where that individual or business person is not or has never been licensed by a Regulator.

51. For example, marked as **Exhibit 16**, is a print out of an article featured in Canadian Consulting Engineer magazine that was made available at:

https://www.canadianconsultingengineer.com/companies-people/pickering-man-fined-10000-for-illegal-use-of-p-eng/1003409049/. The article reports a case involving a construction superintendent, Cosimo Polidoro, who illegally used the title P.Eng. Also attached in **Exhibit 16** are copies of the Court documents showing that Mr. Polidoro was found guilty of illegally using the title professional engineer or an abbreviation or variation thereof and he was ordered to pay fines.

52. Enforcement activity arises from marketplace surveillance by the Regulators and from inquiries or complaints received by Regulators from members of the general public and licensed professional engineers.

53. By way of example, the Association of Professional Engineers and Geoscientists of Saskatchewan has reported that it receives about 10-15 inquiries from the public and/or from members over the course of a year. The Association of Professional Engineers and Geoscientists of Alberta indicates it processes about 500 cases per year (https://www.apega.ca/enforcement/complaints/compliance/).

54. Upon receipt of a complaint, a Regulator will undertake an investigation. If there are grounds to proceed, the subject of the complaint will typically receive a letter that seeks clarification and requests compliance with the relevant statute. In some instances, where the issue cannot be resolved by way of written undertaking, the Regulator will commence legal proceedings to enforce compliance, either by way of criminal prosecution or the seeking of an injunction. Marked as **Exhibit 17** hereto are copies of representative letters of undertaking in compliance cases. Marked as **Exhibit 18** are copies of court decisions and Orders reflecting criminal convictions, Orders directing the cessation of protected engineering designations by an individual or business, and Media Releases.

THE OPPOSED APPLICATION

55. By way of Application no. 2,029,297 ("297 Application"), DSR Karis Consulting Inc. applied to register the trademark ENGINEERING REIMAGINED in association with:

> Architectural design; chemical engineering; civil engineering drawing services; construction drafting; consultancy in the field of software design; design and development of computer hardware; design and development of computer hardware and software; design and development of computer hardware for the manufacturing industries; design and development of computer software; design and development of computers; design and development of computers and programs for computers; design and development of wireless computer networks; design and testing of new products for others; design and writing of computer software; design of computer hardware; design of computers; design of computers for others; design of geological surveys; design of integrated circuits; design of mobile telephones; design of optical and micro optical components; design sketching of packaging containers; design, development and implementation of software; design, development, installation and maintenance

of computer software; design, installation, updating and maintenance of computer software; design, maintenance, development and updating of computer software; design, planning and engineering of compressed-air stations; designing of computer hardware; designing of packaging and wrapping materials; development of computer programs recorded on software designed for use in construction and automated manufacturing (cad/cam); drafting and development of photovoltaic systems; drafting of construction plans for recreation premises; drafting services; engineering surveying services; industrial and graphic art design; industrial design; mechanical engineering; product design consulting services; product packaging design services; research pertaining to mechanical engineering; sanitation engineering; software design and development; technical consulting in the field of aerospace engineering; tool design.

56. Marked as **Exhibit 19** is a copy of the particulars of the '297 Application and the advertisement of the application in the Trademarks Journal.

57. The services described in the '297 Application fall within the scope of services that would be designed, produced and provided by or under the supervision of professional engineers practicing in, but not limited to, the following specializations and sub-specializations of engineering: aerospace engineering, chemical engineering, civil engineering, computer engineering, electrical engineering, industrial and manufacturing engineering, mechanical engineering, software engineering, sanitation engineering, consulting engineering.

Applicant's Website and Business

58. On October 12, 2022, I visited the website of DSR Karis Consulting Inc. available at www.dsrkarisconsulting.com. Marked as **Exhibit 20** is a copy of this webpage.

59. The webpage provides: *"We are a sensible consulting firm with a focus on mechanical, civil and electrical areas of engineering drafting and design. We have individuals who are capable of providing professional engineering services in the areas of our focus and process engineering. We exist to assist Alberta and Saskatchewan businesses by minimizing costs associated with design, drafting, installations, and operational maintenance while working to comply with building standards, recommendations and fostering environmental sustainability."*

60. On that same webpage, under the heading "Minimize Cost" it is provided: *"We are a sensible and local engineering firm with a focus on mechanical engineering that desires to help you by minimizing costs associated with design, drafting, installation, and operational maintenance. We are proactively working to comply with building standards, recommendations and fostering environmental sustainability to all communities – This is Engineering Reimagined."*

61. Several documents including "List of Services", "A Message from the Chief Communications Officer at DSR Karis Consulting Inc.", and "Hello Friends" are available at the bottom of the webpage www.dsrkarisconsulting.com. Marked as **Exhibit 21** are copies of these documents.

62. The services described and advertised on the Applicant's website are those that are, and that one would expect to be, provided by professional engineers. The Applicant's own advertising indicates that the Applicant is an "engineering firm" and that "we have individuals who are capable of providing professional engineering services."

Aerospace Engineering

63. Marked as **Exhibit 22** are pages from the National Occupational Classification Version 2016 ("NOC 2016") available at www.noc.esdc.gc.ca which lists job titles for "Aerospace Engineers" within Unit Group 2146 -"Aerospace Engineers" and provides information about the work performed by aerospace engineers.

64. As described in the NOC 2016, aerospace engineers research, design and develop aerospace vehicles, aerospace systems and their components, and perform duties related to their testing, evaluation, installation, operation and maintenance. They are employed by aircraft and spacecraft manufacturers, air transport carriers, and in government and educational and research institutions.

65. A number of Canadian institutions offer or have offered accredited programs in aerospace engineering. The table below lists the institutions offering these programs and the year the program was accredited by the CEAB:

Canadian Institutions Offering Accredited Programs in AEROSPACE ENGINEERING		
Institution of Higher Learning	**Program**	**Year of Accreditation**
Carleton University	Aerospace Engineering	1992-present
Concordia University	Aerospace Engineering	2018-present
Ryerson	Aerospace Engineering	1992-present

Chemical Engineering

66. Marked as **Exhibit 23** are pages from the NOC 2016 which lists job titles for "Chemical Engineers" within Unit Group 2134 -"Chemical Engineers" and provides information about the work performed by chemical engineers. "Chief process engineer" and "chemical process engineer" are job titles listed in the NOC 2016 in the field of chemical engineering.

67. As noted in the NOC 2016, chemical engineers research, design, and develop chemical processes and equipment, oversee the operation and maintenance of industrial chemical, plastics, pharmaceutical, resource, pulp and paper, and food processing plants and perform duties related to chemical quality control, environmental protection and biochemical or biotechnical engineering. They are employed in a wide range of manufacturing and processing industries, consulting firms, government, research and educational institutions.

68. A number of Canadian institutions offer or have offered accredited programs in chemical engineering. The table below lists the institutions offering these programs and the year the program was accredited by the CEAB:

Canadian Institutions Offering Accredited Programs in CHEMICAL ENGINEERING		
Institution of Higher Learning	**Program**	**Year of Accreditation**
University of Alberta	Chemical Engineering	1965-present
University of British Columbia	Chemical Engineering	1965-present
University of Calgary	Chemical Engineering	1969-present
Dalhousie University	Chemical Engineering	1965-present
Lakehead University	Chemical Engineering	1974-present
Laurentian University	Chemical Engineering	2006-present
McGill University	Chemical Engineering	1965-present
McMaster University	Chemical Engineering	1965-present
University of New Brunswick	Chemical Engineering	1965-present
University of Ottawa	Chemical Engineering	1965-present
Queen's University	Chemical Engineering	1965-present
Royal Military College	Chemical Engineering	1965 - 1981, 2001 - present
Ryerson	Chemical Engineering	1992-present
University of Saskatchewan	Chemical Engineering	1965-present
University of Toronto	Chemical Engineering	1965-present
University of Waterloo	Chemical Engineering	1965-present
University of Western Ontario	Chemical Engineering	1965 - 1971, 2007 - present
University of Windsor	Chemical Engineering	1965-1990

69. Memorial University of Newfoundland offers a CEAB accredited program in process engineering. This program has been available from 2013 to the present. The Memorial University website at www.mun.ca/engineering/process/ provides that "Memorial's Faculty of Engineering and Applied Science is one of the first schools in Canada to offer process engineering. This unique discipline is based on the principles of clean and green engineering and sustainable resource development. It is a broad field of engineering that encompasses the development, design, optimization and operation of sustainable processes for human needs." Marked as **Exhibit 24** is a copy of this webpage.

Civil Engineering

70. Marked as **Exhibit 25** are pages from the NOC 2016 which lists job titles for "Civil Engineers" within Unit Group 2131 -"Civil Engineers" and provides information about the work performed by civil engineers. Notably, "sanitation engineer", "construction engineer" and "architectural engineer" are all job titles listed in the NOC 2016 in the field of civil engineering.

71. Civil engineering is a core engineering discipline. As described in the NOC 2016, civil engineers plan, design, develop and manage projects for the construction or repair of buildings, earth structures, powerhouses, roads, airports, railways, rapid transit facilities, bridges, tunnels, canals, dams, ports and coastal installations and systems related to highway and transportation services, water distribution and sanitation. They may also specialize in foundation analysis, building and structural inspection, surveying, geomatics and municipal planning. They are employed by engineering consulting companies, in all levels of government, by construction firms and in many other industries, or they may be self-employed.

72. A number of Canadian institutions offer or have offered accredited programs in civil engineering. The table below lists the institutions offering these programs and the year the program was accredited by the CEAB:

Canadian Institutions Offering Accredited Programs in CIVIL ENGINEERING		
Institution of Higher Learning	**Program**	**Year of Accreditation**
University of Alberta	Civil Engineering	1965- present
University of British Columbia	Civil Engineering	1965- present
University of British Columbia (Okanagan)	Civil Engineering	2010- present
British Columbia Institute of Technology	Civil Engineering	2010- present
University of Calgary	Civil Engineering	1969- present
Carleton University	Civil Engineering	1965- present
Concordia University	Civil Engineering	1969- present
Dalhousie University	Civil Engineering	1965- present
Lakehead University	Civil Engineering	1974- present
University of Manitoba	Civil Engineering	1965- present
McGill University	Civil Engineering	1965- present
McMaster University	Civil Engineering Civil & Mechanics	1989- present 1966-1988
Memorial University of Newfoundland	Civil Engineering	1975- present
University of New Brunswick	Civil Engineering	1965- present
University of Ottawa	Civil Engineering	1971- present
Queen's University	Civil Engineering	1965- present
Royal Military College	Civil Engineering	1965- present
Ryerson	Civil Engineering	1992- present
University of Saskatchewan	Civil Engineering	1965- present
University of Toronto	Civil Engineering	1965- present
University of Victoria	Civil Engineering	2017-present

University of Waterloo	Civil Engineering	1965- present
University of Western Ontario	Civil Engineering	1965- present
University of Windsor	Civil Engineering	1965- present
York University	Civil Engineering	2018- present
Université Laval	Génie civil	1965- present
Université de Moncton	Génie civil	1972- present
École Polytechnique	Génie civil	1965- present
Université du Québec à Chicoutimi	Génie civil	2012- present
Université de Sherbrooke	Génie civil	1965- present

Computer Engineering

73. Computer engineering involves creation and improvement of technologies and hardware. Computer engineers research, design, develop, evaluate and integrate computer and telecommunications hardware and equipment, and information and communication system networks including wireless communication networks, fibre-optic networks, intranets, the Internet and other systems.

74. Marked as **Exhibit 26** are pages from the NOC 2016 which lists job titles for "Computer Engineers" within Unit Group 2147 – "Computer engineers (except software engineers and designers)" and provides information about the work performed by computer engineers.

75. A number of Canadian institutions offer or have offered accredited programs in computer engineering. The table below lists the institutions offering these programs and the year the program was accredited by the CEAB:

Canadian Institutions Offering Accredited Programs in COMPUTER ENGINEERING		
Institution of Higher Learning	**Program**	**Year of Accreditation**
University of Alberta	Computer Engineering	1983-present
University of British Columbia	Computer Engineering	2000- present
University of Calgary	Computer Engineering	2002-2016
Carleton University	Computer Systems Engineering	1984- present
Concordia University	Computer Engineering	1983- present
Dalhousie University	Computer Engineering	2006-2014
University of Guelph	Computer Engineering Engineering Systems and Computing	2014- present 1994-present
University of Manitoba	Computer Engineering	1987- present
McGill University	Computer Engineering	1993- present
McMaster University	Computer Engineering	1981- present
Memorial University of Newfoundland	Computer Engineering	2002- present
University of New Brunswick	Computer Engineering	2001- 2017
University of Ottawa	Computer Engineering	1990- present
Queen's University	Computer Engineering	2002- present
Royal Military College	Computer Engineering	1983- present

Ryerson	Computer Engineering	2006- present
University of Saskatchewan	Computer Engineering	2009- present
University of Toronto	Computer Engineering	1994- present
University of Victoria	Computer Engineering	1988- present
University of Waterloo	Computer Engineering	1989- present
University of Western Ontario	Computer Engineering	2001- present
York University	Computer Engineering	2007-present
Université Laval	Génie informatique	1993- present
École Polytechnique	Génie informatique	1989- present
Université du Québec à Chicoutimi	Génie informatique	1992- present
Université du Québec en Outaouais	Génie informatique	2002- present
Université de Sherbrooke	Génie informatique	1997- present

Electrical Engineering

76. Electrical engineering is a core engineering discipline pertaining to the design, planning, research, evaluation and testing of electrical and electronic equipment and systems.

77. The work performed by electrical engineers involves the design, planning, research, evaluation and testing of electrical and electronic equipment and systems. For example, electrical engineers may work on electric motors, radar and navigation systems, communications systems, power generation equipment or the electrical systems of automobiles and aircraft.

78. Marked as **Exhibit 27** are pages from the NOC 2016 which lists job titles for "Electrical Engineers" within Unit Group 2133 – "Electrical and electronics engineers". These documents also describe the work of electrical engineers.

79. A number of Canadian institutions offer or have offered accredited programs in electrical engineering. The table below lists the institutions offering these programs and the year the program was accredited by the CEAB:

Canadian Institutions Offering Accredited Programs in ELECTRICAL ENGINEERING		
Institution of Higher Learning	**Program**	**Year of Accreditation**
University of Alberta	Electrical Engineering	1965-present
University of British Columbia	Electrical Engineering	1965- present
University of British Columbia (Okanagan)	Electrical Engineering	2010- present
British Columbia Institute of Technology	Electrical Engineering	2011- present
University of Calgary	Electrical Engineering	1969- present
Carleton University	Electrical Engineering	1965- present
Concordia University	Electrical Engineering	1969- present
Dalhousie University	Electrical Engineering	1965- present
Lakehead University	Electrical Engineering	1974- present
University of Manitoba	Electrical Engineering	1965- present
McGill University	Electrical Engineering	1965- present

McMaster University	Electrical Engineering Electrical and Biomedical Engineering	1965- present 2006-present
Memorial University of Newfoundland	Electrical Engineering	1975- present
University of New Brunswick	Electrical Engineering	1965- present
Ontario Institute of Technology	Electrical Engineering	2009- present
University of Ottawa	Electrical Engineering	1965- present
Queen's University	Electrical Engineering	1965- present
Royal Military College	Electrical Engineering	1965- present
Ryerson	Electrical Engineering	1992- present
University of Saskatchewan	Electrical Engineering	1965- present
University of Toronto	Electrical Engineering	1965- present
University of Victoria	Electrical Engineering	1988- present
University of Waterloo	Electrical Engineering	1965- present
University of Western Ontario	Electrical Engineering	1965- present
University of Windsor	Electrical Engineering	1965- present
York University	Electrical Engineering	2017-present
École de Technologie Supérieure	Génie électrique	1990- present
Université Laval	Génie électrique	1965- present
Université de Moncton	Génie électrique	1998- present
École Polytechnique	Génie électrique	1965- present
Université du Québec à Chicoutimi	Génie électrique	2004- present
Université du Québec à Trois-Rivières	Génie électrique	1978- present
Université du Québec à Rimouski	Génie électrique	2009- present
Université du Québec en Outaouais	Génie électrique	2018-present
Université de Sherbrooke	Génie électrique	1965- present

Industrial and Manufacturing Engineering

80. Marked as **Exhibit 28** are pages from the NOC 2016 which list job titles for "Industrial and Manufacturing Engineers" within Unit Group 2141 – "Industrial and Manufacturing Engineers". These documents also describe the work of industrial and manufacturing engineers.

81. As described in the NOC 2016, Industrial and manufacturing engineers conduct studies, and develop and supervise programs to achieve the best use of equipment, human resources, technology, materials and procedures to enhance efficiency and productivity. They are employed in consulting firms, manufacturing and processing companies, in government, financial, health care and other institutions, or they may be self-employed.

82. A number of Canadian institutions offer or have offered accredited programs in industrial and manufacturing engineering. The table below lists the institutions offering these programs and the year the program was accredited by the CEAB:

Canadian Institutions Offering Accredited Programs in INDUSTRIAL and MANUFACTURING ENGINEERING and SYSTEMS ENGINEERING		
Institution of Higher Learning	**Program**	**Year of Accreditation**
Concordia University	Industrial Engineering	1995-present
Dalhousie University	Industrial Engineering	1969-present
University of Manitoba	Industrial Engineering	1987-2005
Ryerson University	Industrial Engineering	1992-present
University of Toronto	Industrial Engineering	1965-present
University of Windsor	Industrial Engineering	1974-present
University of Regina	Industrial Systems	1984-present
Université Laval	Génie industriel	2014-present
Université de Moncton	Génie industriel	1975-2009
Ecole Polytechnique	Génie industriel	1973- present
Université du Québec à Trois-Rivières	Génie industriel	1980-present
University of Calgary	Manufacturing Engineering	1997-2015
University of Manitoba	Manufacturing Engineering	2003-2013
McMaster University	Manufacturing Engineering	1982-2005
Ontario Institute of Technology	Manufacturing Engineering	2007-present
Université du Québec à Trois-Rivières	Génie mécanique manufacturier	1987-1999
École de Technologie Supérieure	Génie de la production automatisée	1990-present
University of Regina	Systems Engineering	1981-1983
University of Waterloo	Systems Design Engineering	1974-present

Mechanical Engineering

83. Marked as **Exhibit 29** are pages from the NOC 2016 regarding the job title "Mechanical Engineers". "Mechanical Engineers" is listed as Unit Group 2132. Mechanical engineers research, design and develop machinery and systems for heating, ventilating and air conditioning, power generation, transportation, processing, and manufacturing.

84. A number of Canadian institutions offer and have offered accredited programs in mechanical engineering. The table below lists the institutions offering these programs and the years the program was accredited by the CEAB:

Canadian Institutions Offering Accredited Programs in MECHANICAL ENGINEERING		
Institution of Higher Learning	**Program**	**Year of Accreditation**
University of Alberta	Mechanical Engineering	1965-present
University of British Columbia	Mechanical Engineering	1965- present
University of British Columbia (Okanagan)	Mechanical Engineering	2010- present

British Columbia Institute of Technology	Mechanical Engineering	2014- present
University of Calgary	Mechanical Engineering	1969- present
Carleton University	Mechanical Engineering	1965- present
Concordia University	Mechanical Engineering	1969- present
Dalhousie University	Mechanical Engineering	1965- present
University of Guelph	Mechanical Engineering	2013- present
Lakehead University	Mechanical Engineering	1974- present
Laurentian University	Mechanical Engineering	2011- present
University of Manitoba	Mechanical Engineering	1965- present
McGill University	Mechanical Engineering	1965- present
McMaster University	Mechanical Civil & Mechanics	1965- present 1966- 1988
Memorial University of Newfoundland	Mechanical Engineering	1975- present
University of New Brunswick	Mechanical Engineering	1965- present
Ontario Institute of Technology	Mechanical Engineering	2008- present
University of Ottawa	Mechanical Engineering	1971- present
Queen's University	Mechanical Engineering	1965- present
Royal Military College	Mechanical Engineering	1965- present
Ryerson	Mechanical Engineering	1992- present
University of Saskatchewan	Mechanical Engineering	1965- present
University of Toronto	Mechanical Engineering	1965- present
University of Victoria	Mechanical Engineering	1992- present
University of Waterloo	Mechanical Engineering	1965- present
University of Western Ontario	Mechanical Engineering	1965- present
University of Windsor	Mechanical Engineering	1965- present
York University	Mechanical Engineering	2018-present
Conestoga College Institute of Technology and Advanced Learning	Mechanical Systems	2010- present
École de Technologie Supérieure	Génie mécanique	1990- present
Université Laval	Génie mécanique	1965- present
Université de Moncton	Génie mécanique	1990- present
École Polytechnique	Génie mécanique	1965- present
Université du Québec à Chicoutimi	Génie mécanique	2004- present
Université du Québec à Trois-Rivières	Génie mécanique Génie mécanique manufacturier	2000- present 1987-1999
Université du Québec à Rimouski	Génie mécanique	2009- present
Université du Québec en Abitibi-Témiscamingue	Génie mécanique	2010- present
Université de Sherbrooke	Génie mécanique	1965- present

Software Engineering

85. Software engineering involves designing the software behind some of today's most important systems, including smartphones, computer networks, medical devices, and automobiles. These systems may include those that control electrical and mechanical devices or computerized communication systems.

86. Marked as **Exhibit 30** are pages from the NOC 2016 which lists job titles for "Software Engineers" within Unit Group 2173 – "Software engineers and designers". The NOC 2016 pages for software engineers provide that the employment requirements for software engineers include: "*Licensing by a provincial or territorial association of professional engineers is required to approve engineering drawings*

and reports and to practise as a Professional Engineer (P.Eng.). Engineers are eligible for registration following graduation from an accredited educational program, three or four years of supervised work experience in engineering, and passing a professional practice examination."

87. A number of Canadian institutions offer or have offered accredited programs in software engineering. The table below lists the institutions offering these programs and the year the program was accredited by the CEAB:

Canadian Institutions Offering Accredited Programs in SOFTWARE ENGINEERING		
Institution of Higher Learning	**Program**	**Year of Accreditation**
University of Calgary	Software Engineering	2002-present
Carleton University	Software Engineering	2003-present
Concordia University	Software Engineering	2002-present
Lakehead University	Software Engineering	2002-present
McGill University	Software Engineering	2007-present
McMaster University	Software Engineering	2001-present
University of New Brunswick	Software Engineering	2006-present
Ontario Institute of Technology	Software Engineering	2009-present
University of Regina	Software Systems Engineering	2007-present
University of Ottawa	Software Engineering	2001-present
University of Victoria	Software Engineering	2007-present
University of Waterloo	Software Engineering	2006-present
University of Western Ontario	Software Engineering	2001-present
York University	Software Engineering	2016-present
École de Technologie Supérieure	Génie logiciel	2004-present
Laval	Génie logiciel	2006-present
École Polytechnique	Génie logiciel	2005-present

Consulting Engineering

88. Consulting engineers are licensed professional engineers that offer their professional engineering services and expertise to both public and private sector organizations.

89. In Ontario, "Consulting Engineer" is a restricted title regulated by Professional Engineers Ontario (PEO) in accordance with s. 67 of R.R.O. 1990, Reg. 941 under the *Professional Engineers Act*, R.S.O., 1990, c. P.28: "Only a Member designated by the Council may use the title "consulting engineer", "ingénieur-conseil" or "ingénieure-conseil", or a variation of one of those titles approved by the Council from time to time."

90. Marked as **Exhibit 31,** are pages from the PEO website www.peo.on.ca namely: Excerpts from Reg. 941 regarding consulting engineers, Notes regarding experience, and a form for Application for Designation as Consulting Engineer. Also included as **Exhibit 31** is a screen capture of the page Consulting Engineer Designation | Professional Engineers Ontario (peo.on.ca).

STATUS OF THE APPLICANT DSR KARIS CONSULTING INC.

91. Each of the Engineering Regulators maintains a register of persons and/or entities entitled to engage in the practice of engineering within their jurisdiction.

92. The Engineering Statutes generally provide that a certificate, signed by an authorized representative of the provincial or territorial Engineering Regulator, stating whether or not a person or entity was licensed to practice or held a permit as applicable, is admissible evidence of this fact.

93. Engineers Canada made inquiries of the Regulators regarding the status of the Applicant to practice engineering and has obtained certificates from:

- Engineers and Geoscientists of British Columbia (EGBC)
- Association of Professional Engineers and Geoscientists of Alberta (APEGA)
- Association of Professional Engineers and Geoscientists of Saskatchewan (APEGS)
- Engineers Geoscientists Manitoba
- Professional Engineers Ontario (PEO)
- Ordre des ingénieurs du Québec (OIQ)
- Engineers and Geoscientists New Brunswick
- Engineers Nova Scotia
- Engineers PEI
- Engineers Yukon
- Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists (NAPEG)
- Professional Engineers and Geoscientists of Newfoundland and Labrador (PEGNL)

94. These certificates are attached as **Exhibit 32** and confirm that the Applicant, DSR Karis Consulting Inc. is not permitted to engage in the practice of engineering in any of these jurisdictions. It does not have a Certificate of Authorization, Permit to Practice, or Certificate of Compliance (as applicable) in these jurisdictions and no professional engineer licensed within these jurisdictions has listed the Applicant as his/her employer.

USE OF ENGINEERING REIMAGINED

95. On October 12, 2022 I visited the website https://www.rathco.pro/ and the homepage displays the text: "We're engineering, reimagined." The website advertises the

engineering services of RATHCO ENG. Marked as **Exhibit 33** are screen captures of pages from this website showing the phrase "We're engineering, reimagined."

96. Engineers Canada requested certified confirmation from PEO as to whether the company RATHCO ENG. holds a Certificate of Authorization to engage in the practice of engineering in Ontario. Marked as **Exhibit 34** is the certified letter received from PEO confirming that RATHCO ENG. holds a Certificate of Authorization to practice engineering in Ontario.

97. I make this affidavit for the purpose of Engineers Canada's opposition to registration of the trademark subject of the Application number 2,029,297 and for no other purpose.

Affirmed before me at the City of Ottawa, Province of Ontario, on the 19 day of October, 2022

A Commissioner, etc.

Gerard McDonald, P.Eng. MBA

ENGINEERS & GEOSCIENTISTS BRITISH COLUMBIA

September 13, 2022

Attn: Light Go, Legal
Engineers Canada
300-55 rue Metcalfe Street
Ottawa, ON K1P 6L5

Dear Mr. Go,

The Association of Professional Engineers and Geoscientists of the Province of British Columbia, also operating as Engineers and Geoscientists BC (the "Association") certifies as follows:

1. As of the date of this letter, DSR KARIS CONSULTING INC. does not have a Permit to Practice from the Association.

2. Prior to May 20, 2020, the Association did not issue Certificates of Authorization or Permits to Practice.

3. As of the date of this letter, no registrants of the Association currently identify DSR KARIS CONSULTING INC. as their employer in the Association's membership records.

4. Prior to May 20, 2020, no registrants of the Association identified DSR KARIS CONSULTING INC. as their employer in the Association's membership records.

If you have any further questions, please do not hesitate to contact me.

Sincerely,

David Pavan, R.Ph.
Chief Regulatory Officer and Registrar

00146

NAPEG

Northwest Territories and Nunavut
Association of Professional Engineers and Geoscientists

September 21, 2022

EVELYN SPENCE, LL.B., CIC.C, GPC.D
LEGAL COUNCIL AND CORPORATE SECRETARY
ENGINEERS CANADA
300 – 55 RUE METCALFE STREET
OTTAWA, ON K1P 6L5

Re: DSR KARAS CONSULTING INC. (Trademark Opposition)]

Engineers Canada has requested confirmation, in the form of four questions, as to whether the Northwest Territories Association of Professional Engineers and Geoscientists (NAPEG) has issued a Permit to Practice to DSR KARAS CONSULTING INC. or any NAPEG members have identified DSR KARAS CONSULTING INC. as their employer.

Please see our responses to your specific questions below:

1. DSR KARAS CONSULTING INC. is not currently the holder of a Permit to Practice in the Northwest Territories or Nunavut.
2. Prior to May 20, 2020, DSR KARAS CONSULTING INC. was not the holder of a Permit to Practice in the Northwest Territories or Nunavut.
3. No members of NAPEG currently identify DSR KARAS CONSULTING INC. as their employer.
4. Prior to May 20, 2020, no member of NAPEG identified DSR KARAS CONSULTING INC. as their employer.

If you have any questions or concerns for NAPEG, please feel to contact me at your convenience.

Sincerely,

Vince McCormick, LL.B.
Executive Director and Registrar

c. C. Pukanich, Deputy Registrar, NAPEG

201, 4817 – 49th Street Yellowknife, NT X1A 3S7
Phone: 867-920-4055 Fax: 867-873-4058 Web Site: www.napeg.nt.ca

REGISTRAR'S CERTIFICATE

1. I am the Deputy Registrar of the Association of Professional Engineers of Ontario and, as such, have custody of the Registers of licensees, temporary licensees, limited licensees, provisional licensees and Certificate of Authorization holders pursuant to Section 21 of the *Professional Engineers Act*, R.S.O. 1990, Ch. P.28.

2. I have caused a search to be made of the said Registers and I have ascertained that:

   - **DSR KARIS CONSULTING INC.** does not currently hold a Certificate of Authorization under the *Professional Engineers Act.*
   - **DSR KARIS CONSULTING INC.** did not hold a Certificate of Authorization under the *Professional Engineers Act* on or prior to May 20, 2020.
   - No holder of a license, temporary license, limited license or provisional license identifies **DSR KARIS CONSULTING INC.** as their current employer.
   - No holder of a license, temporary license, limited license or provisional license identified **DSR KARIS CONSULTING INC.** as their employer on or before May 20, 2020.

Dated at Toronto this 6th day of September, 2022

Linda Latham, P.Eng
Deputy Registrar

00448

The Association of Professional Engineers and Geoscientists of Alberta

September 7, 2022

Attn: Light Go
Engineers Canada
300-55 Metcalfe Street, Suite 300
Ottawa, ON K1P 6L5

I am writing on behalf of the Association of Professional Engineers and Geoscientists of Alberta (APEGA), based in Edmonton, Alberta, Canada. APEGA has the legislative authority as defined in the *Engineering and Geoscience Professions Act ("EGP Act"), Regulations and By-laws* to oversee the practice of engineering and geoscience within Alberta.

In response to the following questions, as stated in the August 15, 2022, e-mail received from Light Go, Legal, this is to certify that:

1. DSR KARIS CONSULTING INC. is not currently the holder of a Certificate of Authorization or Permit to Practice in Alberta.

2. Prior to May 20, 2020, DSR KARIS CONSULTING INC. was not the holder of a Certificate of Authorization or Permit to Practice in Alberta.

3. There are no members of our Association that currently identify DSR KARIS CONSULTING INC. as their employer.

4. Prior to May 20, 2020, no member(s) have identified DSR KARIS CONSULTING INC. as their employer.

If you require further information, please contact APEGA at any time.

Sincerely,

J. Nagendran

Jay Nagendran, P.Eng., FCAE, ICD.D, FEC, FGC (Hon.)
Registrar & CEO

Email: registrar_ceo@apega.ca
1-800-661-7020

Head Office 1500 Tower One 10060 Jasper Avenue NW Edmonton AB T5J 4A2
PH 780-426-3990 TOLL FREE 1-800-661-7020 FAX 780-426-1877 email@apega.ca www.apega.ca

Calgary Office 2200 Scotia Centre 700 2 Street SW Calgary AB T2P 2W1
PH 403-262-7714 FAX 403-269-2787

Engineers PEI is the business name of
The Association of Professional Engineers
of the Province of Prince Edward Island

135 Water Street
Charlottetown, PE
Canada C1A 1A8
tel 902 . 566 . 1268
www.EngineersPEI.com

August 22, 2022

Engineers Canada
55 Metcalfe Street, Suite 300
Ottawa, ON K1P 6L5
Attn: Light Go, Legal

CERTIFIED LETTER

Attention: Light Go, Legal

Further to your email request of August 15, 2022, we have made the following determination after conducting a search of our records:

TRADE-MARK APPLICATION: Engineering Reimagined, application no. 2,029,297
APPLICANT: DSR KARIS CONSULTING INC.
ADDRESS: 1292 95th St., North Battleford, Saskatchewan, S9A 0G2

Regarding the company **DSR KARIS CONSULTING INC.**

(1) **DSR KARIS CONSULTING INC.** is not currently the holder of a Certificate of Authorization or Permit to Practice with Engineers PEI.

(2) **DSR KARIS CONSULTING INC.** was not the holder of a Certificate of Authorization or Permit to Practice with Engineers PEI prior May 20, 2020.

(3) No members of Engineers PEI currently identify **DSR KARIS CONSULTING INC.** as their employer.

(4) No members of Engineers PEI identified **DSR KARIS CONSULTING INC.** as their employer prior to May 20, 2020, 2020.

Date of Search: August 22, 2022
Name of Person Conducting Search: Kim Levesque
Title of Person Conducting Search: Administrative Assistant

Yours sincerely,

Jim Landrigan, FEC, P.Eng.
Executive Director/Registrar

/kl

00150

September 7, 2022

Engineers Canada
300 - 55 Metcalfe Street
Ottawa, ON K1P 6L5

Attention: Light Go, Legal

Dear Light Go:

It is hereby certified that the company DSR KARIS CONSULTING INC. did **not** hold a Permit to Practice Engineering or Geoscience with Professional Engineers and Geoscientists Newfoundland and Labrador (PEGNL) on or prior to May 20, 2020, nor did any registered members of PEGNL identify the company DSR KARIS CONSULTING INC. as their employer, at that time.

It is also hereby certified that the company DSR KARIS CONSULTING INC. does **not** currently hold a Permit to Practice with Professional Engineers and Geoscientists Newfoundland and Labrador, nor do any current registered members of PEGNL identify the company DSR KARIS CONSULTING INC. as their employer.

This certification is authenticated and sealed by the Deputy Registrar on the 7th day of September 2022.

Sincerely,

Mark Fewer, B. Comm., FEC (Hon), GSP
COO & Deputy Registrar
Professional Engineers & Geoscientists
Newfoundland and Labrador (PEGNL)

PROFESSIONAL ENGINEERS & GEOSCIENTISTS NEWFOUNDLAND & LABRADOR
120 TORBAY ROAD
PRINCE CHARLES BUILDING
SUITE W-270
ST. JOHN'S, NL A1A 2G8
P: 709.753.7714
F: 709.753.6131
www.pegnl.ca
main@pegnl.ca

Engineers Yukon

Suite #205 - 104 Elliott Street
Whitehorse, Yukon Y1A 0M2
867.667.6727
staff@engineersyukon.ca

August 22, 2022

S.B. Light Go, LL.B. (Hon.), M.Sc., CIC.C
Legal Counsel
Engineers Canada
55 Metcalfe Street, Suite 300
Ottawa, ON
K1P 6L5

Re: Engineering Reimagined

Dear Mr. Go,

In response to your email regarding the application for the following trademark Engineering Reimagined, application no. 2,029,297, owned by DSR KARIS CONSULTING INC. please note the following:

(1) Is DSR KARIS CONSULTING INC. currently the holder of a Certificate of Authorization or Permit to Practice in your jurisdiction? **No**

(2) Prior to May 20, 2020, was DSR KARIS CONSULTING INC. the holder of a Certificate of Authorization or Permit to Practice in your jurisdiction? **No**

(3) Do any members of your Association currently identify DSR KARIS CONSULTING INC. as their employer? If yes, please identify the members. **No**

(4) Prior to May 20, 2020, did any member of your Association identify DSR KARIS CONSULTING INC. as their employer? If yes, please identify the members. **No**

I trust this letter meets your requirements at the present time. If you have any questions or require additional information, please contact the Engineers Yukon office or me directly by phone at 867-334-1562 or by email at jdixon@engineersyukon.ca .

Yours truly,
Association of Professional Engineers of Yukon (Engineers Yukon)

Jonathon Dixon, P.Eng.
Registrar

Engineers NOVA SCOTIA

ASSOCIATION OF PROFESSIONAL ENGINEERS OF NOVA SCOTIA
1355 Barrington Street, Halifax, Nova Scotia B3J 1Y9
T. 902-429-2250 F. 902-423-9769 Toll Free. 1-888-802-7367
www.engineersnovascotia.ca

August 17, 2022

Engineers Canada
300-55 Metcalfe Street,
Ottawa, ON
K1P 6L5

To Whom it may Concern:

***Re:* DSR KARIS CONSULTING INC. (Trademark Opposition of "Engineering Reimagined", trademark application number 2,029,297)**

1. *DSR KARIS CONSULTING INC.* currently is not the holder of a Certificate of Compliance in Nova Scotia.

2. Prior to May 20, 2020, *DSR KARIS CONSULTING INC.* was not the holder of a Certificate of Compliance in Nova Scotia.

3. No members of Engineers Nova Scotia currently identify *DSR KARIS CONSULTING INC.* as their employer.

4. Prior to May 20, 2020, no members of Engineers Nova Scotia had identified *DSR KARIS CONSULTING INC.* as their employer.

Yours truly,

DS (Pal) Mann, CD, P.Eng.
CEO & Registrar, Engineers Nova Scotia

c.c. Kris Dove, MBA, FEC, P.Eng.
COO and Treasurer, Engineers Nova Scotia

ENGINEERS GEOSCIENTISTS MANITOBA

August 17, 2022

Legal Counsel
Engineers Canada
55 Metcalfe Street, Suite 300
Ottawa, ON K1P 6L5

RE: DSR KARIS CONSULTING INC.

On the matter of the trade-mark application:

(1) **DSR KARIS CONSULTING INC.** is not currently the holder of a Certificate of Authorization in our jurisdiction.

(2) **DSR KARIS CONSULTING INC.** was not the holder of a Certificate of Authorization in our jurisdiction prior to May 20, 2020.

(3) No members of our Association currently identify **DSR KARIS CONSULTING INC.** as their employer.

(4) No members of our Association identified **DSR KARIS CONSULTING INC.** as their employer prior to May 20, 2020.

Please contact Ms. Danielle Unett at (204) 474-2736 ext-236 if you require further information.

Regards,

Grant Koropatnick

Grant Koropatnick, P.Eng., FEC
CEO & Registrar

870 PEMBINA HIGHWAY
WINNIPEG, MANITOBA
CANADA R3M 2M7

T 204 474 2736
TF 1 866 227 9600
F 204 474 5960

E Info@EngGeoMB.ca
W EngGeoMB.ca

A P E G S
Association of Professional Engineers & Geoscientists of Saskatchewan

Suite 300 - 4581 Parliament Avenue, Regina, Saskatchewan S4W 0G3
T *(306) 525 9547* **F** *(306) 525 0851 Toll Free: 1 800 500 9547*
E-mail: apegs@apegs.ca

August 15, 2022

Our File: 20.1.2

Engineers Canada / Ingénieurs Canada
Suite 300 - 55 Metcalfe Street
Ottawa ON K1P 6L5

Attention: Light Go, Legal

Dear Light:

RE: **Trademark:** Engineering Reimagined, application no. 2,029,297
Applicant: DSR KARIS CONSULTING INC

After conducting a search of our records, I have determined the following:

1. DSR KARIS CONSULTING INC is not the current holder of a Certificate of Authorization in the Province of Saskatchewan. The applicant was also not a Certificate of Authorization holder on May 20, 2020.

2. To the best of our knowledge DSR KARIS CONSULTING INC has never held a Certificate of Authorization in Saskatchewan.

3. No current member of APEGS has identified DSR KARIS CONSULTING INC as their employer. Due to the real-time nature of our database, we are unable to determine whether any APEGS members have identified DSR KARIS CONSULTING INC as their employer as of May 20, 2020, or any other time.

This certificate is made in accordance with sub-section 19(3) of *The Engineering and Geoscience Professions Act*, c.E-9.3, s.19, 1996.

Date of search:	August 15, 2022
Name of person conducting search:	Jolene Arthur
Title of person conducting search:	Compliance Coordinator

Sincerely,

Stormy Holmes, P.Eng., FEC, FGC (Hon.)
Executive Director and Registrar

ENGINEERS GEOSCIENTISTS New Brunswick | INGÉNIEURS GÉOSCIENTIFIQUES Nouveau-Brunswick

August 17, 2022

S.B. Light Go, LL.B. (Hon.), M.Sc., CIC.C
Legal Counsel
Engineers Canada
300 - 55 Metcalfe Street
Ottawa ON K1P 6L5

Dear Mr. Go:

TRADE-MARK APPLICATION: ENGINEERING REIMAGINED

This letter is in response to your email dated August 15, 2022, requesting information from APEGNB to use as evidence in the opposition of the trademark application: ENGINEERING REIMAGINED application no. 2,029,297, owned by DSR KARIS CONSULTING INC with a head office at 1292 95TH ST, NORTH BATTLEFORD, SASKATCHEWAN, S9A 0G2.

APEGNB responds **NO** to each of the following questions:

(1) Is DSR KARIS CONSULTING INC currently the holder of a Certificate of Authorization or Permit to Practice in your jurisdiction?
(2) Prior to May 20, 2020, was DSR KARIS CONSULTING INC the holder of a Certificate of Authorization or Permit to Practice in your jurisdiction?
(3) Do any members of your Association currently identify DSR KARIS CONSULTING INC as their employer? If yes, please identify the members.
(4) Prior to May 20, 2020, did any member of your Association identify DSR KARIS CONSULTING INC as their employer? If yes, please identify the members.

I trust this information satisfies your requirements. If you have any questions, or require additional information, please feel free to contact the undersigned.

Sincerely,

Lia A. Daborn
CEO & Registrar

00456

ing. Ordre des ingénieurs du Québec

Le 07 octobre 2022

Madame,
Monsieur,

Je, soussignée, certifie par la présente qu'aucun membre de l'Ordre des ingénieurs du Québec n'a identifié « ***DSR KARIS CONSULTING INC*** . » comme étant son employeur en date de ce jour.

En tant que secrétaire de l'Ordre, j'ai la garde des registres, tableaux, archives et dossiers de l'Ordre relatifs à l'émission des permis d'exercice et à l'inscription au tableau des membres de l'Ordre.

Secrétaire de l'Ordre et directrice des Affaires juridiques,

Me Pamela McGovern, avocate

1801, avenue McGill College, 6e étage
Montréal (Québec) H3A 2N4
www.oiq.qc.ca

Téléphone : 514-845-6141
1 800 461-6141
Télécopieur : 514-845-1833

World Health Organization

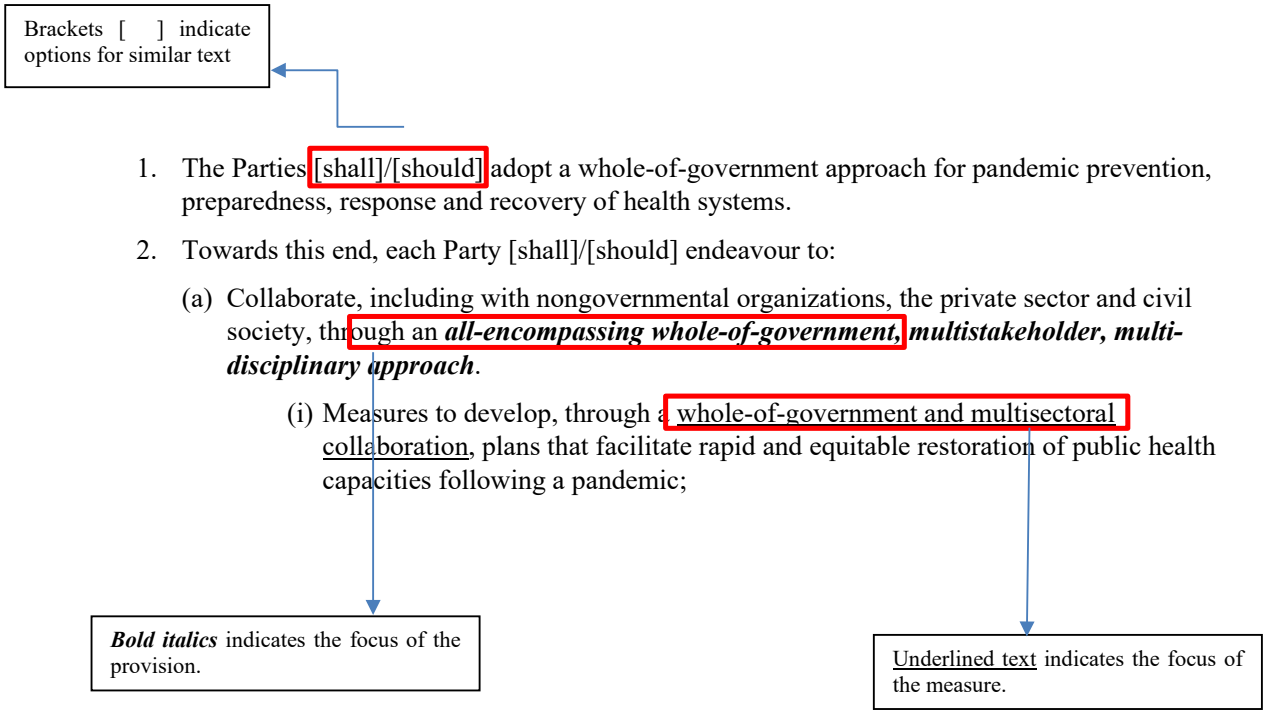
THIRD MEETING OF THE INTERGOVERNMENTAL NEGOTIATING BODY TO DRAFT AND NEGOTIATE A WHO CONVENTION, AGREEMENT OR OTHER INTERNATIONAL INSTRUMENT ON PANDEMIC PREVENTION, PREPAREDNESS AND RESPONSE
Provisional agenda item 2

A/INB/3/3
25 November 2022

Conceptual zero draft for the consideration of the Intergovernmental Negotiating Body at its third meeting

This conceptual zero draft was developed by the Bureau of the Intergovernmental Negotiating Body and reflects input from five sources, as set out in the section on page 3 entitled "Background, Methodology and Approach". The conceptual zero draft is presented as a bridge between the working draft and the future zero draft of the WHO CA+. It is not a draft of the WHO CA+.

Reader's guide



The formatting of selected text in ***bold italics*** or underline is done solely to facilitate the reading of this document.

BACKGROUND, METHODOLOGY AND APPROACH

Background

At its second special session in December 2021, the World Health Assembly established an Intergovernmental Negotiating Body (INB) open to all Member States and Associate Members (and regional economic integration organizations as appropriate) to draft and negotiate a WHO convention, agreement or other international instrument on pandemic prevention, preparedness and response, with a view to its adoption under Article 19, or other provisions of the WHO Constitution as deemed appropriate by the INB; see decision SSA2(5) (2021), paragraph (1).

In furtherance of the above mandate, at its second meeting, the INB agreed that the instrument should be legally binding and contain both legally binding as well as non-legally binding elements. In that regard, the INB identified Article 19 of the WHO Constitution as the comprehensive provision under which the instrument should be adopted, without prejudice to also considering as work progressed, the suitability of Article 21. At its second meeting, the INB requested the Bureau to develop a conceptual zero draft of the instrument for discussion at the third meeting of the INB.

Accordingly, the Bureau has prepared a conceptual zero draft for consideration by the INB at its third meeting.

Methodology and approach

The INB requested the Bureau to develop a conceptual zero draft that reflected the following inputs:

- Comments from the second meeting of the INB;
- Written inputs on the working draft from Member States (30), regional submissions (2), and relevant stakeholders (36);
- Input from regional consultations organized during the six regional committee meetings in 2022;
- Outcomes from the four informal focused consultations held by the INB Bureau during the intersessional period between the second and third INB meetings, which addressed the following topics: legal matters; operationalizing and achieving equity; intellectual property, and production and transfer of technology and know-how; and One Health in the context of strengthening pandemic prevention, preparedness and response, with reference to antimicrobial resistance, climate change and zoonoses; and
- Outcomes from the second round of public hearings, conducted in September 2022, by the WHO Secretariat to support the work of the INB.

In preparing a conceptual zero draft, the Bureau started by integrating the above-mentioned input into the working draft (document A/INB/2/3) as a basis for developing the conceptual zero draft. Consistent with the requests made by Member States during the second meeting of the INB, the Bureau then consolidated the text to reduce overlaps and duplication and increase coherence, including through streamlining and grouping similar topics. In this process:

- The topic of "recovery" was added insofar as it relates to the recovery of health systems from a pandemic;
- Areas covered by the International Health Regulations (2005) were removed;
- Reordering and grouping of similar areas/concepts was carried out, including deletion of duplications and repetitions;
- Mindful of the identification, at the second meeting of the INB, of Article 19 of the WHO Constitution as the comprehensive provision under which the instrument should be adopted, without prejudice to also considering, as work progressed, the suitability of Article 21, potential, non-exclusive, indicative text is provided in Chapters VII and VIII, for consideration in that regard, based on the approach of an instrument under Article 19 of the WHO Constitution, and with reference to existing international instruments, particularly within the WHO framework.

Similar to the working draft, this conceptual zero draft is provided as a flexible, "living" document, with a view to moving it towards a zero draft. This process will be informed by Member States' discussions during the third meeting of the INB.

Contents

CONCEPTUAL ZERO DRAFT FOR THE CONSIDERATION OF THE INTERGOVERNMENTAL NEGOTIATING BODY AT ITS THIRD MEETING

Preamble[1]

1. *Reaffirming* the principle of sovereignty of States Parties in addressing public health matters, notably pandemic prevention, preparedness, response and health systems recovery;

2. *Recognizing* the critical role of international cooperation and obligations for States to act in accordance with international law, including to respect, protect and promote human rights;

3. *Recognizing* that all lives have equal value, and that therefore equity should be a principle, an indicator and an outcome of pandemic prevention, preparedness and response;

4. *Recalling* the preamble to the Constitution of the World Health Organization, which states that the enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition, and that unequal development in different countries in the promotion of health and control of disease, especially communicable disease, is a common danger;

5. *Noting* that a pandemic situation is extraordinary in nature, requiring States Parties to prioritize effective and enhanced cooperation with development partners and other relevant stakeholders to address extraordinary challenges;

6. *Recognizing* that the international spread of disease is a global threat with serious consequences for public health, human lives, livelihoods, societies and economies that calls for the widest possible international cooperation and participation of all countries and relevant stakeholders in an effective, coordinated, appropriate and comprehensive international response;

7. *Recalling* the International Health Regulations (2005) of the World Health Organization and the role of States Parties and other stakeholders in preventing, protecting against, controlling and providing a public health response to the international spread of disease in ways that are commensurate with, and restricted to, public health risks, and which avoid unnecessary interference with international traffic and trade;

8. *Recognizing* that national action plans for pandemic prevention, preparedness, response and recovery of health systems should take into account all people, including communities and persons in vulnerable situations, places and ecosystems;

9. *Recognizing* that the threat of pandemics is a reality and that pandemics have catastrophic health, social, economic and political consequences, especially for persons in vulnerable situations, pandemic prevention, preparedness, response and recovery of the health system must be systemically integrated into whole-of-government and whole-of-society approaches, to ensure adequate political commitment, resourcing and attention across sectors, and thereby break the cycle of "panic and neglect";

10. *Reflecting* on the lessons learned from coronavirus disease (COVID-19) and other outbreaks with global and regional impact, including, inter alia, HIV, Ebola virus disease, Zika virus disease, Middle

[1] The Bureau proposes, consistent with Member State submissions, that the preambular section be discussed at the appropriate point in the negotiations.

East respiratory syndrome and monkeypox, and with a view to addressing and closing gaps and improving future response;

11. *Recognizing* that urban settings are especially vulnerable to infectious diseases and epidemics, and the important role that communities have in preventing, preparing for and responding to health emergencies;

12. *Noting* with concern that the COVID-19 pandemic has revealed serious shortcomings in preparedness – especially at city and urban levels – for timely and effective prevention and detection of, as well as response to, potential health emergencies, indicating the need to better prepare for future health emergencies;

13. *Noting* that women comprise more than 70% of the global health care workforce and an even higher proportion of the informal health workforce, and during the COVID-19 response were disproportionately impacted by the burden of pandemics, notably on health workers;

14. *Reaffirming* the importance of diverse, gender-balanced and equitable representation and expertise in pandemic prevention, preparedness, response and health system recovery decision-making, as well as in the design and implementation of activities;

15. *Expressing* concern that those affected by conflict and insecurity are particularly at risk of being left behind during pandemics;

16. *Recognizing* the synergies between multisectoral collaboration – through whole-of-government and whole-of-society approaches at the country and community level – and international, regional and cross-regional collaboration, coordination and global solidarity, and their importance to achieving sustainable improvements in pandemic prevention, preparedness and effective response;

17. *Acknowledging* that the repercussions of pandemics, beyond health and mortality, on socioeconomic impacts in a broad array of sectors, including economic growth, employment, trade, transport, gender inequality, food insecurity, education, environment and culture, require a multisectoral whole-of-society approach to pandemic prevention, preparedness, response and recovery of the health system;

18. *Acknowledging* the impacts of determinants of health across different sectors and communities on the vulnerability of communities, especially persons in vulnerable situations, to the spread of pathogens and the evolution of an outbreak;

19. *Underscoring* that multilateral and regional cooperation and good governance are essential to prevent, prepare for, respond to, and the recovery of health systems from, pandemics that by definition know no borders and require collective action and solidarity;

20. *Emphasizing* that policies and interventions on pandemic prevention, preparedness, response and recovery of health systems should be supported by the best available scientific evidence and adapted to take into account resources and capacities at subnational and national levels;

21. *Reaffirming* the importance of access to timely information, as well as efficient risk communication that manages to counteract the pandemic;

22. *Understanding* that most emerging infectious diseases originate in animals, including wildlife and domestic animals, then spill over to people;

23. *Recognizing* the importance of working synergistically with other relevant areas, under a One Health Approach, as well as the importance and public health impact of growing possible drivers of pandemics, which need to be addressed as a means of preventing future pandemics and protecting public health;

24. *Noting* that antimicrobial resistance is often described as a silent pandemic and that it could be an aggravating factor during a pandemic;

25. *Reaffirming* the importance of a One Health approach and the need for synergies between multisectoral and cross-sectoral collaboration at national, regional and international levels to safeguard human health, detect and prevent health threats at the animal and human interface, in particular zoonotic spill-over and mutations, and sustainably balance and optimize the health of people, animals and ecosystems, and, in this respect, acknowledging the creation of the Quadripartite, (WHO, the Food and Agriculture Organization (FAO), the World Organisation for Animal Health (WOAH) and the United Nations Environment Programme (UNEP)) to better address any One Health-related issue;

26. *Reiterating* the need to work towards building and strengthening resilient health systems to advance universal health coverage, as an essential foundation for effective pandemic prevention, preparedness, response and recovery of health systems, and to adopt an equitable approach to prevention, preparedness, response and recovery activities, including to mitigate the risk that pandemics exacerbate existing inequities in access to services;

27. *Recognizing* that health is a precondition for, and an outcome and indicator of, the social, economic and environmental dimensions of sustainable development and the implementation of the 2030 Agenda for Sustainable Development;

28. *Recognizing* that pandemics have a disproportionately heavy impact on frontline workers, notably health workers, the poor and persons in vulnerable situations, with repercussions on health and development gains, in particular in developing countries, thus hampering the achievement of universal health coverage and the Sustainable Development Goals, with their shared commitment to leave no one behind;

29. *Recognizing* the need to enhance global solidarity and effective global coordination, as well as accountability and transparency, to avoid serious negative impacts of public health threats with pandemic potential, especially on countries with limited capacities and resources;

30. *Acknowledging* that there are significant differences in countries' capacities to prevent, prepare for, respond to, and recover from pandemics;

31. *Deeply concerned* by the gross inequities that hindered timely access to medical and other COVID-19 pandemic response products, notably vaccines, oxygen supplies, personal protective equipment, diagnostics and therapeutics;

32. *Reiterating* the determination to achieve health equity through resolute action on social, environmental, cultural, political and economic determinants of health, such as eradicating hunger and poverty, ensuring access to health and proper food, safe drinking water and sanitation, employment and decent work and social protection in a comprehensive intersectoral approach;

33. *Emphasizing* that in order to make health for all a reality, individuals and communities need: equitable access to high quality health services without financial hardship; well trained, skilled health workers providing quality, people-centred care; and committed policymakers with adequate investment in health to achieve universal health coverage;

34. *Emphasizing* that improving pandemic prevention, preparedness, response and recovery of health systems relies on a commitment to mutual accountability, transparency and common but differentiated responsibility by all States Parties and relevant stakeholders;

35. *Recalling* the Doha Declaration on the TRIPS Agreement and Public Health of 2001 and reiterating that the TRIPS Agreement does not and should not prevent Members from taking measures to protect public health;

36. *Reaffirming* that the TRIPS Agreement can and should be interpreted and implemented in a manner supportive of WTO Members' right to protect public health, and, in particular, to promote access to medicines for all;

37. *Reaffirming* that WTO Members have the right to use, to the full, the TRIPS Agreement and the Doha Declaration on the TRIPS Agreement and Public Health of 2001, which provide flexibility to protect public health including in future pandemics;

38. [Proposal: *Recognizing* that protection of intellectual property rights is important for the development of new medical products, but also recognizing concerns about its effects on prices, as well as noting discussions/deliberations in relevant international organizations on, for instance, innovative options to enhance the global effort towards the production of, timely and equitable access to, and distribution of health technologies and know-how, by means that include local production;]

> [38. Proposal: *Recognizing* that protection of intellectual property rights is important for the development of new medicines, and also recognizing concerns about the negative effect on prices and on the production of, timely and equitable access to, and distribution of vaccines, treatments, diagnostics and health technologies and know-how;]
>
> [38. Proposal: *Recognizing* that intellectual property protection is important for the development of new medicines, and also recognizing concerns about its effect on prices, as well as noting discussions on enhancing global efforts towards the production of, timely and equitable access to, and distribution of health technologies and products;]
>
> [38. Proposal: *Recognizing* the concerns that intellectual property on life-saving medical technologies continue to pose threat and barriers to the full realization of the right to health and to scientific progress for all, particularly the effect on prices, which limits access options and impedes independent local production and supplies, as well as noting structural flaws in the institutional and operational arrangements in the global response to the COVID 19 pandemic, and the need to establish a future pandemic prevention, preparedness and response mechanism that is not based on a charity model;]

39. [Proposal: *Reaffirming* the flexibilities and safeguards contained in the Agreement on Trade-Related Aspects of Intellectual Property Rights and their importance for removing barriers to production of, and access to, pandemic response products, as well as sustainable supply-chains for their equitable distribution, while also recognizing the need for sustainable mechanisms to support transfer of technology and know-how to support the same;]

[39. Proposal: *Reaffirming* the flexibilities and safeguards contained in the Agreement on Trade Related Aspects of Intellectual Property Rights and their importance for ensuring access to technologies, knowledge and full transfer of technology and know-how for production and supply of pandemic response products, as well as their equitable distribution;]

40. *Recalling* resolution WHA61.21 (2008) on the global strategy and plan of action on public health, innovation and intellectual property, which lays out a road map for a global research and development system supportive of access to appropriate and affordable medical countermeasures, including those needed in a pandemic;

41. *Recognizing* that publicly funded research and development plays an important role in the development of pandemic response products, and, as such, requires conditionalities;

42. *Underscoring* the importance of promoting early, safe, transparent and rapid sharing of samples and genetic sequence data of pathogens, as well as the fair and equitable sharing of benefits arising therefrom, taking into account relevant national and international laws, regulations, obligations and frameworks, including the International Health Regulations (2005), the Convention on Biological Diversity and its Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity, and the Pandemic Influenza Preparedness Framework, and also mindful of the work being undertaken in other relevant areas and by other United Nations and multilateral organizations or agencies;

43. *Recognizing* the central role of WHO in pandemic prevention, preparedness, response and recovery of health systems as the directing and coordinating authority on international health work, and in convening and generating scientific evidence, and, more generally, fostering multilateral cooperation in global health governance;

44. *Acknowledging* that pandemic prevention, preparedness, response and recovery of health systems at all levels and in all sectors, particularly in developing countries, require predictable, sustainable and sufficient financial, human, logistical and technical resources.

Vision

The WHO CA+[1] aims to protect present and future generations from pandemics and their devastating consequences, and to advance the enjoyment of the highest attainable standard of health for all peoples, on the basis of equity, human rights and solidarity, with a view to achieving universal health coverage, and recognizing the sovereign rights of countries and respect for their national context, as well as the differences in capacities and levels of development among them, through the fullest national and international cooperation in order to strengthen capacities to prevent, prepare for and respond to pandemics, with unhindered, timely and equitable access to pandemic response products, and resilient health systems recovery.

[1] WHO CA+: At its second meeting in July 2022, the INB identified that Article 19 of the WHO Constitution is the comprehensive provision under which the instrument should be adopted, without prejudice to also considering, as work progressed, the suitability of Article 21.

Chapter I. Introduction

Article 1. Definitions and use of terms

To be developed: *This article would define or explain, as appropriate, all relevant terms and phrases, for example, technical terms, institutions, organizations and other terms, for the purposes of this WHO CA+.*

Article 2. Relationship with international agreements and instruments

(1) The Parties recognize that the WHO CA+ and other relevant international instruments should be interpreted so as to be complementary and synergistic. The provisions of the WHO CA+ shall not affect the rights and obligations of any Party deriving from other existing international instruments and shall respect the competencies of other organizations and treaty bodies.

(2) In furtherance of the foregoing, it is expressly noted that the WHO CA+ is developed to be consistent with the Charter of the United Nations and the Constitution of WHO, and to be complementary and synergistic with the International Health Regulations (2005) (and any later editions). In that regard, reference is made to Article 57 of the International Health Regulations (2005) (IHR (2005)), pursuant to which States Parties recognize that the IHR (2005) and other relevant international agreements should be interpreted so as to be compatible.

(3) In the event that any part of the WHO CA+ addresses areas or activities that may bear on the field of competence of other organizations or treaty bodies, appropriate steps will be taken to avoid duplication and promote synergies, compatibility and coherence, with a common goal of strengthened pandemic preparedness, prevention and response.

(4) The provisions of the WHO CA+ shall in no way affect the right of Parties to enter into bilateral or multilateral instruments, including regional or subregional instruments, on issues relevant or additional to the WHO CA+, provided that such instruments are compatible with, and do not conflict with, their obligations under the WHO CA+. The Parties concerned shall communicate such instruments through the Governing Body for the WHO CA+.

For the purpose of this Article, the term “WHO CA+” includes the WHO CA+ and any protocols thereto, as well as annexes, guidelines and other related instruments as the Parties may deem integral to the WHA CA+, whether presently existing or established at a later date, established under the WHO CA+.

Chapter II. Objective(s), principles and scope

Article 3. Objective(s)

The objective of the WHO CA+, guided by the vision and principles set out therein, is to save lives and protect livelihoods, through strengthening, proactively, the world’s capacities for preventing, preparing for and responding to, and recovery of health systems from pandemics. The WHO CA+ aims to address systemic gaps and challenges that exist in these areas, at national, regional and international levels, through substantially reducing the risk of pandemics, increasing pandemic preparedness and response capacities, and ensuring coordinated, collaborative and evidence-based pandemic response and resilient recovery of health systems.

Article 4. Principles

To achieve the objective(s) of the WHO CA+ and to implement its provisions, the Parties will be guided, as applicable by the context, inter alia, by the principles set out below:

1. **Respect for human rights** – The implementation of the WHO CA+ shall be with full respect for the dignity, human rights and fundamental freedoms of persons, and each Party shall protect and promote such freedoms.

2. **The right to health** – The enjoyment of the highest attainable standard of health, defined as a state of complete physical, mental and social well-being, is one of the fundamental rights of every human being without distinction of age, race, religion, political belief, economic or social condition.

3. **Sovereignty** – States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to determine and manage their approach to public health, notably pandemic prevention, preparedness, response and recovery of health systems pursuant to their own policies and legislation provided that activities within their jurisdiction or control do not cause damage to other States and their peoples. Sovereignty also covers the rights of States over their biological resources.

4. **Equity** – An effective response to pandemics requires ensuring fair, equitable and timely access to affordable, safe and efficacious pandemic response products, among and within countries, including between groups of people irrespective of their social or economic status.

5. **Solidarity** – The effective prevention of, preparedness for, and response to, pandemics require national, international, multilateral, bilateral, and multisectoral collaboration, coordination and cooperation in order to achieve a fairer, more equitable and better prepared world.

6. **Transparency** – The effective prevention of, preparedness for, and response to, pandemics depends on transparent and timely sharing of information, data and other elements at all levels, notably through a whole-of-government and whole-of-society approach, based on, and guided by, the best-available scientific evidence, consistent with national, regional and international privacy and data protection rules, regulations and laws.

7. **Accountability** – Countries are responsible and accountable for strengthening and sustaining their health systems' capacities and public health functions to provide adequate health and social measures by adopting and implementing legislative, executive, administrative and other measures for fair, equitable, effective and timely pandemic prevention, preparedness, response and recovery of health systems. All Parties [shall] / [should] cooperate with other States and relevant international organizations, with particular reference to entities at the frontline of humanitarian settings and fragile and conflict-affected areas, in order to collectively strengthen, support and sustain capacities for global prevention, preparedness, response and recovery of health systems.

8. **Common but differentiated responsibilities and capabilities in pandemic prevention, preparedness, response and recovery of health systems** – Full consideration and prioritization are required of the specific needs and special circumstances of developing country Parties, especially those that (i) are particularly vulnerable to adverse effects of pandemics; (ii) do not have adequate capacities to respond to pandemics; and (iii) would have to bear a disproportionate or abnormal burden.

9. **Inclusiveness** – The active engagement with, and participation of, all relevant stakeholders and partners across all levels, consistent with relevant and applicable international and national guidelines,

rules and regulations (including those relating to conflicts of interest), is fundamental for mobilizing resources and capacities to support pandemic prevention, preparedness, response and health systems recovery.

10. **Community engagement** – Full engagement by communities in prevention, preparedness, response and recovery of health systems is essential to mobilize social capital, resources, adherence to public health and social measures, and to gain trust in government.

11. **Gender equality** – Pandemic prevention, preparedness, response and recovery of health systems will be guided by the aim of equal participation and leadership of men and women in decision-making with a particular focus on gender equality, taking into account the specific needs of all women and girls, using a country-driven, gender responsive/transformative, participatory and fully transparent approach.

12. **Non-discrimination and respect for diversity** – All individuals should have fair, equitable and timely access to pandemic response products and health services, without fear of discrimination or distinction based on race, religion, political belief or economic or social condition.

13. **Rights of individuals and groups at higher risk and in vulnerable situations** – Nationally determined and prioritized actions, including support, will take into account communities and persons in vulnerable situations, places and ecosystems. Indigenous peoples, refugees, migrants, asylum seekers, and stateless persons, persons in humanitarian settings and fragile contexts, marginalized communities, older people, persons with disabilities, persons with health conditions, pregnant women, infants, children and adolescents, for example, are particularly impacted by pandemics, owing to social and economic inequities, as well as legal and regulatory barriers, that may prevent them from accessing health services.

14. **One Health** – Multisectoral actions should recognize the importance of a coherent, integrated and unifying approach that aims to sustainably balance and optimize the health of people, animals and ecosystems, including through, but not limited to, attention to the prevention of epidemics due to pathogens resistant to antimicrobial agents.

15. **Universal health coverage** – The WHO CA+ will be guided by the aim of achieving universal health coverage, for which strong and resilient health systems are of key importance, as a fundamental aspect of achieving the Sustainable Development Goals through promoting health and well-being for all at all ages.

16. **Science and evidence-informed decisions** – Science, evidence and findable, accessible, interoperable and reusable (FAIR) data should inform all public health decisions and the development and implementation of guidance for pandemic prevention, preparedness, response and recovery of health systems.

17. **Central role of WHO** – As the directing and coordinating authority in global health, and the leader of multilateral cooperation in global health governance, WHO is fundamental to strengthening pandemic prevention, preparedness, response and recovery of health systems.

18. **Proportionality** – Due consideration should be given, including through continuous policy evaluation, to ensuring that the impacts of measures aimed at preventing, preparing for and responding to pandemics are proportionate to their intended objectives.

Article 5. Scope

The WHO CA+ applies to pandemic prevention, preparedness, response and health systems recovery at national, regional and international levels.

Chapter III. Achieving equity in, for and through pandemic prevention, preparedness, response and recovery of health systems

Article 6. Global supply chain and logistics network

1. The Parties [shall]/[should] build and sustain an equitable, transparent, rapid, resourced, coordinated, uninterrupted and reliable global supply chain and logistics network for pandemic response products.

2. Towards this end, each Party [shall]/[should]:

(a) Ensure a ***concerted and coordinated approach*** to the availability and distribution of, and equitable access to, pandemic response products, by means that include:

(i) measures that leverage well-established and proven systems, processes and mechanisms, notably the supply chain and logistics experience from across the United Nations system, mindful of the need to build on respective strengths

(ii) measures to promote and encourage transparency in cost and pricing of pandemic response products, including development, production and distribution costs

(iii) measures to safeguard the humanitarian principles of humanity, neutrality, impartiality and independence, and to facilitate the unimpeded access of humanitarian staff and cargo

(b) Prioritize and coordinate ***country requests for essential supplies*** based on public health needs and updated national action plans for pandemic prevention, preparedness, response and recovery of health systems;

(c) Enhance countries' and regional logistical capacities to ***establish and maintain strategic stockpiles*** of pandemic response products;

(d) Allocate ***supplies, raw materials and other necessary inputs for sustainable production of pandemic response products*** (especially active pharmaceutical ingredients) including for stockpiling purposes, through the most efficient multilateral and regional purchasing mechanisms, including pooled mechanisms and in-kind contributions, based on public health needs, by means that include:

(i) measures that address the restriction of distribution of pandemic response products

(e) Establish and operationalize ***international consolidation hubs, as well as regional staging areas***, to ensure that transport of supplies is streamlined and uses the most appropriate means for the products concerned.

Article 7. Access to technology: promoting sustainable and equitably distributed production and transfer of technology and know-how

1. The Parties [shall]/[should] develop multilateral mechanisms, particularly during inter-pandemic times, that promote and provide relevant transfer of technology and know-how, in a manner consistent with international legal frameworks, to potential manufacturers in developing countries/all regions to increase and strengthen regional and global manufacturing capacity.

2. Towards this end, each Party [shall]/[should]:

(a) Strengthen local capacity, particularly in developing countries and regional groups, to manufacture pandemic response products through ***transfer of technology and know-how*** in order to ensure rapid and equitable access to adequate global supplies that meet surge demand, including by encouraging innovative options, by means that include:

(i) measures to strengthen coordination, including trilateral cooperation among the World Health Organization, the World Trade Organization and the World Intellectual Property Organization, as well as other relevant United Nations agencies, on issues related to public health, intellectual property and trade, including timely matching of supply to demand, and mapping manufacturing capacities and demand

(ii) innovative mechanisms and incentives to promote transfer of technology and know-how, including through technology transfer hubs and product development partnerships, and to address the short timeframe in which new pandemic response products are developed and needed, by means that include:

(a) measures to incentivise the development of pandemic response products, including incentives targeted at developing countries

(iii) measures to encourage, incentivize, and facilitate participation of private-sector entities in voluntary transfer of technology and know-how through collaborative initiatives and multilateral mechanisms

(iv) measures to support time-bound waivers of protection of intellectual property rights that are a barrier to manufacturing of pandemic response products during pandemics

(v) measures to fully reflect the flexibilities provided in the TRIPS Agreement, including those recognized in the Doha Declaration on the TRIPS Agreement and Public Health and in Articles 27, 30 (including the research exception and "Bolar" provision), 31 and 31bis of the TRIPS Agreement

(vi) measures to ensure an available, skilled and trained manufacturing workforce that is ready to support local production, through scaling up of training and capacity of training institutions, upon request

(b) Bolster and strengthen national, and, where appropriate, regional ***regulatory authorities' capacities***, to prepare for and accelerate emergency licensing and approval procedures, grounded in evidence-based procedures and evaluation, to allow for the timely availability of essential pandemic response products, by means that include:

(i) measures to build and strengthen the capacity of regulatory authorities and increase the harmonization of regulatory requirements at the international and regional level, including through mutual recognition agreements

(ii) measures to build and strengthen country regulatory capacities for timely approval of products for pandemic prevention, preparedness, response and recovery of health systems

(iii) measures to accelerate the process of licensing and approving pandemic response products for emergency use in a timely manner, including the sharing of regulatory dossiers

(iv) measures to monitor and regulate against sub-standard and falsified pandemic response products, through existing Member State mechanisms.

Article 8. Increase research and development capacities

1. The Parties [shall]/[should] build and strengthen capacities and institutions for innovative research and development, particularly in developing countries, by means that include scientific and technical cooperation, collaboration and communication, consistent with national and international biosafety and biosecurity standards, guidelines and regulations. Publicly funded research and development for pandemic prevention, preparedness, and response [shall]/[should] include conditions on prices of products, allocation, data sharing and transfer of technology, as appropriate.

2. Towards this end, each Party [shall]/[should]:

(a) Promote and align international, regional and national ***scientific and technical cooperation*** and action in research and the development of technology, by means that include:

(i) measures to strengthen research and development processes and capacities for rapid and timely development and production, at national, regional and global levels, of pandemic response products, such as but not limited to, diagnostics, medicines and vaccines, particularly in developing countries

(ii) measures to encourage the sharing and gradual increase of resources (human and financial), including from public sources, for research and development of pandemic response products

(iii) measures to encourage non-State actors, including the private sector, to participate in and accelerate innovative research and development for novel and resistant pathogens and emerging and re-emerging diseases with pandemic potential, as well as neglected tropical diseases

(a) measures to support the collective development and use of principles and norms and sets of practices that ensure that public financing of research and development for pandemic response products results in more equitable access and affordability, including through conditions on distributed manufacturing, licensing, technology transfer and pricing policies

(b) measures to limit indemnity or confidentiality clauses in commercial pandemic response product contracts between countries and manufacturers, taking into account public financing in research and development

(c) measures to ensure that promoters of research for pandemic response products assume part of the risk (liability) when the products or supplies are in the research phase, and that making access to such pandemic response products or supplies conditional on a waiver of such liability is discouraged

(iv) measures to promote and incentivize technology co-creation and joint venture initiatives aimed at strengthening research and development capacities, particularly in developing countries, including through regional hubs or centres of excellence

(v) measures to provide international standards for, and oversight of, as well as reporting on, laboratories and research facilities that carry out work to genetically alter organisms to increase their pathogenicity and transmissibility, in order to prevent accidental release of these pathogens, while ensuring that these measures do not create any unnecessary administrative hurdles for research

(b) Foster ***information sharing*** through open science approaches for rapid sharing of scientific findings and research results, irrespective of the outcome, by means that include:

(i) measures to promote the dissemination of the results of publicly and government-funded-research for the development of pandemic response products

(ii) measures to promote and strengthen knowledge translation and evidence communication tools and strategies at local, national, regional and international levels

(c) Develop strong, resilient national, regional and international ***clinical research ecosystems***, by means that include:

(i) measures to foster and coordinate national, regional and international high quality clinical research/trials

(ii) measures to ensure equitable access to investment in clinical trials, so that resources are deployed optimally and efficiently

(iii) measures to support the transparent and rapid reporting of clinical research/trial results, to ensure evidence is available in a timely manner to inform national, regional and international decision-making

(iv) measures related to disclosure of disaggregated information on research and development and clinical trials of vaccines, diagnostics, pharmaceuticals and other products relevant to pandemic preparedness and response

(d) Increase the ***transparency of information about funding*** for research and development for pandemic response products, by means that include:

(i) measures related to the disclosure of information on public funding for research and development of potential pandemic response products and provisions to enhance the availability and accessibility of the resulting work, including freely available and publicly accessible publications and public reporting of the relevant patents

(ii) recommendations to make it compulsory for companies that produce pandemic response products to disclose prices and contractual terms for public procurement in times of pandemics.

Article 9. Fair, equitable and timely access and benefit-sharing

1. The Parties [shall]/[should] develop provisions on access and benefit-sharing to promote rapid and transparent sharing, in a safe and secure manner, of pathogens with pandemic potential and genetic sequence data on the one hand, and fair and equitable access to benefits arising from such sharing on the other, by establishing a comprehensive system for access and benefit-sharing, taking into account relevant elements of the Convention on Biological Diversity and its Nagoya Protocol, including by building upon or adapting mechanisms and/or principles contained in existing or previous instruments, such as, but not limited to, the FAO International Treaty on Plant Genetic Resources for Food and Agriculture and the WHO Pandemic Influenza Preparedness Framework.

2. Towards this end, each Party [shall]/[should]:

(a) Ensure ***timely access to affordable, safe, efficacious and effective pandemic response products***, including diagnostics, vaccines, personal protective equipment and therapeutics, by means that include:

(i) measures to ensure their equitable distribution, in particular to developing countries according to public health risk and need

(ii) measures to develop national plans that identify priority populations and prioritize access to pandemic response products by health care workers, other frontline workers and persons in vulnerable situations, such as, indigenous peoples, refugees, migrants, asylum seekers and stateless persons, the elderly, persons with disabilities, persons with health conditions, pregnant women, infants, children and adolescents

(b) Promote and facilitate recognition of the system as a ***specialized system for access and benefit-sharing***, by means that include:

(i) measures to engage with all relevant actors in the design, development and implementation of the system for access and benefit-sharing

(ii) commitments to facilitate real-time access by all countries to pandemic response products, based on public health need

(c) Promote rapid, regular and timely ***sharing of pathogens, genetic sequence data*** and relevant metadata through effective standardized real-time global and regional platforms, by means that include:

(i) measures to ensure that platforms are standardized, effective, real-time, and promote findable, accessible, interoperable and reusable (FAIR) data available to all Parties

(ii) measures to ensure consistency with international legal frameworks, notably those for collection of patient specimens, material and data

(iii) measures to ensure that laboratories handling pathogens of pandemic potential do so safely, securely, and in accordance with international best practice guidelines

(iv) measures to support and enhance biosafety and biosecurity as a prerequisite for sharing of pathogens and genetic sequence data.

Chapter IV. Strengthening and sustaining capacities for pandemic prevention, preparedness, response and recovery of health systems

Article 10. Strengthening and sustaining preparedness and health systems' resilience

1. The Parties [shall]/[should] promote and strengthen resilient health systems for pandemic prevention, preparedness, response and recovery of health systems.

2. Towards this end, each Party [shall]/[should]:

(a) Strengthen ***public health functions*** for pandemic prevention and preparedness to ensure robust pandemic response and recovery of health systems, by means that include:

(i) measures to build and reinforce surveillance systems, including One Health, outbreak investigation and control, through interoperable early warning and alert systems, across public and private sectors and relevant agencies, notably the Quadripartite, and consistent with relevant tools, including, but not limited to, the International Health Regulations (2005)

(ii) measures to build capacities in genomic sequencing, as well as in analysing and sharing such information, in order to inform risk assessment and trigger rapid response to public health threats with pandemic potential, including emerging and re-emerging zoonoses

(iii) measures to develop prevention strategies for epidemic-prone diseases, and emerging, growing or evolving public health threats with pandemic potential, notably at the human–animal–environment interface

(iv) measures to ensure equitable and affordable access to health technologies to promote the strengthening of national health systems and mitigate social inequalities

(b) Strengthen ***public health capacities to ensure availability of quality routine health services***, including immunization, during pandemics, and ***continuity of essential health service provision*** during the response, notably with a focus on primary health care and community level interventions, to mitigate the shocks caused by emergencies and prevent the health system from becoming overwhelmed, by means that include:

(i) measures to ensure continuity of primary health care and universal health coverage by maintaining the availability of, and timely access to, efficacious, quality, safe, effective, affordable and equitable health services, including clinical and mental health care

(ii) measures to address the backlog in the diagnosis and treatment of, and interventions for, other illnesses during pandemics

(c) Ensure ***recovery and restoration of resilient national health systems*** through universal health coverage, including systems for a rapid and scalable response, by means that include:

(i) measures to strengthen post-emergency health system recovery strategies in order to share the lessons learned and to improve countries' capacity in prevention, preparation, surveillance and response

(ii) measures related to resources and training at national level in order to care for patients with long-term effects from the disease

(d) Strengthen ***public health laboratory and diagnostic capacities, and national, regional and global networks***, including standards and protocols for public health laboratory biosafety and biosecurity;

(e) Enhance ***financial, technical and technological support, assistance and cooperation*** among Member States to strengthen health systems consistent with the goal of universal health coverage;

(f) Develop and ***sustain up-to-date, universal platforms and technologies*** for forecasting and timely information sharing, through appropriate capacities, including building ***digital health and data science capacities***.

Article 11. Strengthening and sustaining a skilled and competent health workforce

1. The Parties [shall]/[should] strengthen and sustain an adequate, skilled, trained, competent and committed health workforce, with due protection of their employment, civil and human rights and well-being, consistent with relevant codes of practice, including at the frontline of pandemic prevention, preparedness, response and recovery of the health system.

2. Towards this end, each Party [shall]/[should]:

(a) Mobilize and coordinate ***adequate human, financial and other necessary resources*** for affected countries, based on public health need, in order to contain outbreaks and prevent an escalation of small-scale spread to global proportions;

(b) Strengthen in- and post-service training of adequate numbers of ***health workers***, including community health workers equipped with public health core competencies, and ensure adequate laboratory capacity, including for conducting genomic sequencing, through sustainable funding support, and deployment and retention of a health workforce that can be mobilized for pandemic response in all settings;

(c) Establish an available, skilled and trained ***global public health emergency workforce*** that is deployable to support affected countries upon request, through scaling up of training and capacity of training institutions, by means that include:

(i) measures to support the development of a network of training institutions, national and regional facilities and centres of expertise in order to establish common protocols to enable more predictable, standardized and systematic response missions and deployment of surge staff

(d) Provide ***better opportunities and working environments for health workers***, notably women, to ensure their role and leadership in the health sector, with a view to increasing the meaningful representation, engagement, participation and empowerment of all health workers, while addressing discrimination, stigma and inequality and eliminating bias, including unequal

remuneration, while also noting that women still often face significant barriers to taking leadership and decision-making roles.

Article 12. Preparedness monitoring, simulation exercises and peer reviews

1. The Parties [shall]/[should] develop and implement effective and efficient monitoring of pandemic prevention and preparedness, through regular simulation exercises and peer review.

2. Towards this end, each Party [shall]/[should]:

(a) Develop and implement ***comprehensive, inclusive, multisectoral national pandemic prevention, preparedness, response and health system recovery strategies***;

(b) Map and develop ***monitoring and evaluation plans*** for health interventions related to outbreaks and public health emergencies

(i) measures to ensure dynamic preparedness capacity assessment is undertaken and national action plans are developed

(ii) measures to develop, incorporate from, or build on, existing global and national indicators for monitoring prevention and preparedness

(c) Periodically ***drill the national action plans***, through global, regional and national simulation and tabletop exercises, which include risk and vulnerability mapping;

(i) measures to support Parties, particularly in developing countries, to regularly conduct simulation exercises to assess readiness and gaps, including logistics and supply chain management, as well as to plan and implement measures for strengthening and sustaining preparedness capacity

(ii) measures to support countries to conduct after action reviews of any public health emergency event in order to identify gaps, share lessons learned, and improve national pandemic prevention and preparedness

(d) Establish, regularly update and broaden implementation of a ***global peer review mechanism*** to assess national, regional and global preparedness capacities and gaps, by bringing nations together to support a whole-of-government and whole-of-society approach to strengthening national capacities for pandemic prevention, preparedness, response and health systems recovery, through technical and financial cooperation, mindful of the need to integrate available data, and to engage national leadership at the highest level;

(e) Implement the ***recommendations generated from review mechanisms***, including prioritization of activities for immediate action;

(f) Provide ***regular reporting***, building on existing relevant reporting where possible, on pandemic prevention, preparedness, response and health systems recovery capacities.

Chapter V. Pandemic prevention, preparedness, response and health system recovery coordination, collaboration, and cooperation

Article 13. Coordination, collaboration and cooperation

1. The Parties [shall]/[should] coordinate, collaborate and cooperate, in the spirit of international solidarity, with other Parties and competent international and regional intergovernmental organizations and other bodies in the formulation of cost-effective measures, procedures and guidelines for pandemic prevention, preparedness, response and recovery of health systems.

2. Towards this end, each Party [shall]/[should]:

(a) Promote global, regional and national ***political commitment, coordination and leadership*** for pandemic prevention, preparedness, response and recovery of the health system, by means that include establishing appropriate governance arrangements/[good governance principles] rooted in the Constitution of the World Health Organization;

(b) Support mechanisms that ensure global, regional and national ***policy decisions are science and evidence-based***, through enhanced coordination, collaboration and sharing of information among experts, scientific bodies, academic institutions and networks;

(c) Develop ***policies that are inclusive;***

(i) measures to recognize the specific needs of persons in vulnerable situations, indigenous peoples, and those living in fragile areas, such as small island developing States facing multiple threats simultaneously

(ii) measures to promote equitable gender, geographical and socioeconomic status, representation and participation in global and regional decision-making processes, global networks and technical advisory groups, as well as the participation of youth

(a) measures to gather and analyse data, including data disaggregated by gender, on the impact of policies on different groups

(d) Promote ***solidarity with countries that report public health emergencies*** as an incentive to facilitate transparency and timely reporting of public health events;

(e) Enhance ***WHO's central role as the directing and coordinating authority*** on international health work, mindful of the need for coordination with entities in the United Nations system and other intergovernmental organizations;

(i) facilitate WHO rapid access to outbreak areas, including through the deployment of expert teams to evaluate and support the response to emerging outbreaks.

Article 14. Whole-of-government and other multisectoral actions

1. The Parties [shall]/[should] adopt a whole-of-government approach to pandemic prevention, preparedness, response and recovery of health systems.

2. Towards this end, each Party [shall]/[should]:

(a) Collaborate, including with non-State actors, the private sector and civil society, through an ***all-encompassing whole-of-government, multistakeholder, multi-disciplinary and multi-level approach***, by means that include:

(i) measures to develop, through whole-of-government and multisectoral collaboration, plans that strengthen pandemic preparedness, prevention, response capacities and which facilitate rapid and equitable restoration of public health capacities following a pandemic

(b) Tackle the ***social, environmental and economic determinants of health*** that contribute to the emergence and spread of pandemics, and prevent or mitigate the socioeconomic impacts of pandemics, including but not limited to, those affecting economic growth, the environment, employment, trade, transport, gender equality, education, social assistance, housing, food insecurity, nutrition and culture, and especially for persons in vulnerable situations;

(c) Support timely and scalable ***mobilization of multi-disciplinary surge capacity*** of human and financial resources and facilitate timely allocation of resources to the frontline pandemic response;

(d) Strengthen ***national public health and social policies to facilitate a rapid, resilient response***, especially for persons in vulnerable situations.

Article 15. Community engagement and whole-of-society actions

1. Recognizing that pandemics begin and end in communities, for effective pandemic prevention, preparedness, response and recovery of health systems, the Parties [shall]/[should] promote, empower and strengthen the engagement/participation of communities to ensure their ownership of, and contribution to, community readiness and resilience, including public health and social measures.

2. Towards this end, each Party [shall]/[should]:

(a) Engage with ***communities, civil society, academia and non-State actors, including the private sector***, as part of a whole-of-society approach to pandemic prevention, preparedness, response and recovery of health systems;

(b) Promote ***science and evidence-based/informed effective and timely risk assessment***, including the uncertainty of data when communicating such risk to the public;

(c) Mobilize *social capital in* ***communities for mutual support***, especially to persons in vulnerable situations;

(d) Promote two-way ***engagement of civil society, communities and non-State actors, including the private sector***, as part of a whole-of-society response that involves communities in decision making and uses feedback mechanisms;

(e) Establish or reinforce and adequately finance ***an effective national coordinating multisectoral mechanism*** with meaningful representation, engagement, participation and empowerment of communities, for pandemic prevention, preparedness, response and recovery of health systems.

Article 16. Strengthening pandemic and public health literacy

1. The Parties [shall]/[should] increase science, public health and pandemic literacy, as well as access to information on pandemics and their effects, and tackle false, misleading, misinformation or disinformation, including through promotion of international cooperation.

2. Towards this end, each Party [shall]/[should]:

(a) ***Inform the public, communicate risk and manage infodemics*** through effective channels, including social media;

(b) Conduct regular social media analysis to identify and ***understand misinformation, and design communications and messaging*** to the public to counteract misinformation, disinformation and false news;

(c) Foster ***health, science and media literacy, and promote communications on scientific, engineering and technological advances*** relevant to the development and implementation of international rules and guidelines for pandemic prevention, preparedness, response and recovery of health systems;

(d) Promote and facilitate, at all appropriate levels, in accordance with national laws and regulations, ***development and implementation of educational and public awareness programmes*** on pandemics and their effects;

(e) Strengthen ***public trust and counter misinformation and disinformation***, including through providing timely, simple, clear, coherent, accurate, transparent and effective global and national communications, based on science and evidence, promoting media literacy and ethical professional journalism, and strengthening research on misinformation and disinformation and its relationship to public trust in order to inform policies;

(f) Strengthen ***research into the behavioural barriers and drivers*** of adherence to public health measures, confidence and uptake of vaccines, use of therapeutics and trust in science and government institutions.

Article 17. One Health

1. In the context of pandemic prevention, preparedness, response and recovery of health systems, the Parties [shall]/[should] promote and enhance synergies between multisectoral collaboration at national level and cooperation at the international level, in order to safeguard human health and detect and prevent health threats at the interface between animal, human and environment ecosystems, while recognizing their interdependence.

2. Towards this end, each Party [shall]/[should]:

(a) Promote and implement a ***One Health approach that is coherent, coordinated and collaborative*** among all relevant actors, existing instruments and initiatives, by means that include:

(i) measures to identify and integrate into relevant pandemic prevention and preparedness plans, drivers for the emergence of disease at the human–animal–

environment interface, including but not limited to climate change, land use change, wildlife trade, desertification and antimicrobial resistance;

(b) Implement actions to ***prevent pandemics from pathogens resistant to antimicrobial agents***, taking into account relevant tools and guidelines, through a One Health approach, and collaborate with relevant partners, including the Quadripartite;

(c) Strengthen ***multisectoral, coordinated, interoperable, integrated One Health surveillance systems*** to minimize spill-over events and mutations and prevent small scale outbreaks in wildlife or domesticated livestock from becoming a pandemic, by means that include:

(i) measures to ensure that actions at national and community levels encompass whole-of-government and whole-of-society perspectives, including engagement of communities in surveillance that identifies zoonotic outbreaks and antimicrobial resistance

(d) Develop and implement a ***national One Health Action Plan on antimicrobial resistance*** which improves antimicrobial stewardship in the human and animal sectors; optimizes consumption; increases investment in, and promotes equitable and affordable access to, new medicines, diagnostic tools, vaccines and other interventions; strengthens infection prevention and control in health care settings; and provides technical support to developing countries;

(e) Enhance the ***surveillance and reporting of antimicrobial resistance*** in human, livestock and aquaculture of pathogens which have pandemic potential, building on the existing global reporting systems;

(f) Regularly ***assess One Health capacities***, insofar as they relate to pandemic prevention, preparedness, response and recovery of health systems, to identify gaps, policies and the funding needed to strengthen those capacities;

(g) Strengthen ***synergies with other existing relevant instruments*** which address the drivers of pandemics, such as climate change, biodiversity loss, ecosystem degradation and increased risks at the animal–human–environment interface due to human activities;

(h) Take the One Health approach into account at national, subnational and facility levels in order to produce science-based evidence, and support, facilitate and/or oversee the correct, ***evidence-based and risk-informed implementation of infection prevention and control***.

Chapter VI. Financing

Article 18. Sustainable and predictable financing

1. The Parties [shall]/[should] ensure, through existing and/or new mechanisms, sustainable and predictable financing, while enhancing transparency and accountability, to achieve the objective of the WHO CA+.

2. Towards this end, each Party [shall]/[should]:

(a) Strengthen and prioritize ***domestic financing*** for pandemic prevention, preparedness, response and health systems recovery, including through greater collaboration between the health, finance and private sectors, in support of primary health care and universal health coverage;

(b) Finance, through ***new or established international mechanisms***, regional and global capacity-building for pandemic prevention, preparedness, response and recovery of health systems;

(c) Measures to ensure/enhance ***sustainable, [equitable, fair,] and predictable financing*** of global, regional and national systems and tools and global public goods for pandemic prevention, preparedness, response and recovery of health systems, through existing or new mechanisms, while avoiding duplication and ensuring synergies, in order to guarantee equitable access to preparedness financing;

(d) Facilitate rapid and effective mobilization of ***adequate financial resources***, including from international financing facilities, to affected countries, based on public health need, to maintain and restore routine public health functions during and in the aftermath of a pandemic response.

Chapter VII. Institutional arrangements

Article 19. Governing body for the WHO CA+[1]

1. A governing body for the WHO CA+ is established to promote the effective implementation of the WHO CA+ (hereinafter, the "Governing Body").

2. The Governing Body shall be composed of:

(a) The Conference of the Parties (COP), which shall be the supreme organ of the Governing Body;

(b) The Officers of the Parties (OP), which shall be the administrative organ of the Governing Body; and

(c) The Enlarged Conference of the Parties (E-COP), which will include relevant stakeholders and will provide broad input for the decision-making processes of the COP.

3. The COP, as the supreme policy setting organ of the WHO CA+, shall keep under regular review the implementation of the WHO CA+ and any related legal instruments that the COP may adopt, and shall make the decisions necessary to promote the effective implementation of the Convention. The COP shall:

(a) Be composed of delegates representing Parties;

(b) Convene ordinary sessions of the Governing Body; the first of which shall take place not later than one year after the date of entry into force of the Convention, at a time and place to be determined by the WHO Secretariat, with the time and place of subsequent ordinary sessions to be determined by the COP upon a proposal of the Officers of the Parties;

(c) Convene extraordinary sessions of the Governing Body at such other times as may be deemed necessary by the COP, or at the written request of any Party, provided that, within 30

[1] *This and subsequent articles provide a conceptual approach for the governing body for the WHO CA+.*

days of such a request being communicated to the Parties by the Secretariat, it is supported by at least one third of the Parties; and

(d) Adopt its rules of procedure, as well as those of the other bodies of the Governing Body, which shall include decision-making procedures. Such procedures may include specified majorities required for the adoption of particular decisions.

4. The Officers of the Parties, as the administrative organ of the Governing Body, shall:

(a) Be composed of two Presidents and four Vice-Presidents, serving in their individual capacity and elected by the COP, as well as two rapporteurs elected by the E-COP;

(b) Endeavour to make decisions by consensus; however, if efforts to reach consensus are deemed by the Presidents to be unavailing, decisions may be taken by voting by the President and Vice-Presidents.

5. The E-COP, as the polylateral diplomacy venue for encouraging broad input for the decision-making processes of the COP, shall:

(a) Be composed of delegates representing Parties;

(b) Be composed of representatives of the United Nations and its specialized and related agencies, as well as any State Member thereof or observers thereto not Party to the CA+;

(c) Be further composed of representatives of any body or organization, whether national or international, governmental or non-governmental, private sector or public sector, which is qualified in matters covered by the WHO CA+, and which, upon nomination by any Party, is supported by a two thirds majority of the COP;

(d) Be subject to the rules of procedure adopted by the COP.

6. The Governing Body may further develop proposals for consideration by the WHO Executive Board, including to promote coordination between its Standing Committee on Health Emergency Prevention, Preparedness and Response and the Governing Body for the CA+.

Article 20. Oversight mechanisms for the WHO CA+[1]

1. The Governing Body, at its first meeting, shall consider and approve cooperative procedures and institutional mechanisms to promote compliance with the provisions of the WHO CA+ and, if deemed appropriate, to address cases of non-compliance.

2. These measures, procedures and mechanisms shall include monitoring provisions and accountability measures to systematically address preparedness for, response to, and the impact of pandemics, by means that include submission of periodic reports, reviews, remedies and actions, and to

[1] *A number of existing universal international agreements, including the United Nations Framework Convention on Climate Change (198 Parties, including 197 countries and the EU) and Paris Agreement (194 Parties, including 193 countries and the EU), as well as the 1985 Vienna Convention for the Protection of the Ozone Layer and its Montreal Protocol (both having 198 Parties, including 197 countries and the EU), may provide useful sources for mechanisms regarding oversight, reporting and related processes and bodies for consideration by the INB.*

offer advice or assistance, where appropriate. These measures shall be separate from, and without prejudice to, the dispute settlement procedures and mechanisms under the WHO CA+.

Article 21. Assessment and review

1. The Governing Body shall establish a mechanism to undertake, four years after the entry into force of the WHO CA+, and thereafter at intervals and upon modalities determined by the Governing Body, an evaluation of the relevance and effectiveness of the WHO CA+, and recommend corrective measures, including, if deemed appropriate, amendments to the text of the WHO CA+.

Article 22. Financial mechanisms and resources to support WHO CA+

1. The Parties recognize the important role that financial resources play in achieving the objective(s) of the WHO CA+, and the primary financial responsibility of national governments in protecting and promoting the health of their populations.

2. Each Party shall provide financial support in respect of its national activities intended to achieve the objective(s) of the WHO CA+, in accordance with its national plans, priorities and programmes.

3. Each Party shall plan and provide financial support in line with its national fiscal capacities for the effective implementation of the WHO CA+.

4. The Parties shall promote, as appropriate, the use of bilateral, regional, subregional and other appropriate and relevant multilateral channels to provide funding, for the development and strengthening of pandemic prevention, preparedness, response and health system recovery programmes of developing country Parties.

5. The Parties represented in relevant regional and international intergovernmental organizations, and financial and development institutions shall encourage these entities to provide financial assistance for developing country Parties and for Parties with economies in transition, to support them in meeting their obligations under the WHO CA+, without limiting their right to participate in these organizations.

Chapter VIII. Final provisions

Article 23. Reservations

1. No reservations may be made to the WHO CA+.

Article 24. Withdrawal

1. At any time after two years from the date on which the WHO CA+ has entered into force for a Party that Party may withdraw from the WHO CA+ by giving written notification to the Depository.

2. Any such withdrawal shall take effect upon expiry of one year from the date of receipt by the Depository of the notification of withdrawal, or on such later date as may be specified in the notification of withdrawal.

3. Any Party that withdraws from the WHO CA+ shall be considered as also having withdrawn from any protocol to which it is a Party.

Article 25. Right to vote

1. Each Party to the WHO CA+ shall have one vote, except as provided for in paragraph 2 of this Article.

2. Regional economic integration organizations, in matters within their competence, shall exercise their right to vote with a number of votes equal to the number of their Member States that are Parties to the WHO CA+. Such an organization shall not exercise its right to vote if any of its Member States exercises its right, and vice versa.

Article 26. Amendments to the WHO CA+

1. Any Party may propose amendments to the WHO CA+. Such amendments will be considered by the Governing Body.

2. Amendments to the WHO CA+ shall be adopted by the Governing Body. The text of any proposed amendment to the WHO CA+ shall be communicated to the Parties by the Secretariat at least six months before the session at which it is proposed for adoption. The Secretariat shall also communicate proposed amendments to the signatories of the WHO CA+ and, for information, to the Depository.

3. The Parties shall make every effort to reach agreement by consensus on any proposed amendment to the WHO CA+. If all efforts at consensus have been exhausted, and no agreement reached, the amendment shall as a last resort be adopted by a two-thirds majority vote of the Parties present and voting at the session. For purposes of this Article, Parties present and voting means Parties present and casting an affirmative or negative vote. Any adopted amendments shall be communicated by the Secretariat to the Depository, who shall circulate it to all Parties for acceptance.

4. Instruments of acceptance in respect of an amendment shall be deposited with the Depository. An amendment adopted in accordance with paragraph 3 of this Article shall enter into force for all Parties when adopted by a two-thirds vote and accepted by two-thirds of the Parties in accordance with their respective constitutional processes.

5. The amendment shall enter into force for any other Party on the ninetieth day after the date on which that Party deposits with the Depository its instrument of acceptance of the said amendment.

Article 27. Adoption and amendment of annexes to the WHO CA+

1. Annexes to the WHO CA+ and amendments thereto shall be proposed, adopted and shall enter into force in accordance with the procedure set forth in the WHO CA+.

2. Annexes to the WHO CA+ shall form an integral part thereof and, unless otherwise expressly provided, a reference to the WHO CA+ constitutes at the same time a reference to any annexes thereto.

3. Annexes shall be restricted to lists, forms and any other descriptive material relating to procedural, scientific, technical or administrative matters.

Article 28. Protocols to the WHO CA+[1]

1. Any Party may propose protocols to the WHO CA+. Such proposals will be considered by the Governing Body.

2. The Governing Body may adopt protocols to the WHO CA+. In adopting these protocols every effort shall be made to reach consensus. If all efforts at consensus have been exhausted and no agreement reached, the protocol shall as a last resort be adopted by a two-thirds majority vote of the Parties present and voting at the session. For the purposes of this Article, Parties present and voting means Parties present and casting an affirmative or negative vote.

3. The text of any proposed protocol shall be communicated to the Parties by the Secretariat at least six months before the session at which it is proposed for adoption.

4. States that are not Parties to the WHO CA+ may be Parties to a protocol thereof, provided the protocol so provides.

5. Any protocol to the WHO CA+ shall be binding only on the Parties to the protocol in question. Only Parties to a protocol may take decisions on matters exclusively relating to the protocol in question.

6. The requirements for entry into force of any protocol shall be established by that instrument.

Article 29. Signature

1. The WHO CA+ shall be open for signature by all Members of the World Health Organization and by any States that are not Members of the World Health Organization but are members of the United Nations and by regional economic integration organizations at the World Health Organization headquarters in Geneva from [●] [●] 202[●] to [●] [●] 202[●], and thereafter at United Nations Headquarters in New York, from [●] [●] 202[●] to [●] [●] 202[●].

Article 30. Ratification, acceptance, approval, formal confirmation or accession

1. The WHO CA+ shall be subject to ratification, acceptance, approval or accession by States, and to formal confirmation or accession by regional economic integration organizations. It shall be open for accession from the day after the date on which the WHO CA+ is closed for signature. Instruments of ratification, acceptance, approval, formal confirmation or accession shall be deposited with the Depository.

2. Any regional economic integration organization which becomes a Party to the WHO CA+ without any of its Member States being a Party shall be bound by all the obligations under the WHO CA+. In the case of those organizations, where one or more of its Member States is a Party to the WHO CA+, the organization and its Member States shall decide on their respective responsibilities for the performance of their obligations under the WHO CA+. In such cases, the organization and the Member States shall not be entitled to exercise rights under the WHO CA+ concurrently.

3. Regional economic integration organizations shall, in their instruments relating to formal confirmation or in their instruments of accession, declare the extent of their competence with respect to

[1] *Nothing in this Article, or other provisions of this conceptual zero draft, is intended to pre-judge the nature or structure of the final instrument.*

the matters governed by the WHO CA+. These organizations shall also inform the Depository, who shall in turn inform the Parties, of any substantial modification in the extent of their competence.

Article 31. Entry into force

1. The WHO CA+ shall enter into force on the [thirtieth] day following the date of deposit of the [fortieth] instrument of ratification, acceptance, approval, formal confirmation or accession with the Depository.

2. For each State that ratifies, accepts or approves the WHO CA+ or accedes thereto after the conditions set out in paragraph 1 of this Article for entry into force have been fulfilled, the WHO CA+ shall enter into force on the [thirtieth] day following the date of deposit of its instrument of ratification, acceptance, approval or accession.

3. For each regional economic integration organization depositing an instrument of formal confirmation or an instrument of accession after the conditions set out in paragraph 1 of this Article for entry into force have been fulfilled, the WHO CA+ shall enter into force on the thirtieth day following the date of its depositing of the instrument of formal confirmation or of accession.

4. For the purposes of this Article, any instrument deposited by a regional economic integration organization shall not be counted as additional to those deposited by States Members of the Organization.

Article 32. Provisional application

1. The WHO CA+ may be applied provisionally by a Party that consents to its provisional application by so notifying the Depository in writing at the time of signature or deposit of its instrument of ratification, acceptance, approval, formal confirmation or accession. Such provisional application shall become effective from the date of receipt of the notification by the Secretary-General of the United Nations.

2. Provisional application by a Party shall terminate upon the entry into force of the WHO CA+ for that Party or upon notification by that Party to the Depository in writing of its intention to terminate its provisional application.

Article 33. Settlement of disputes

1. In the event of a dispute between two or more Parties concerning the interpretation or application of the WHO CA+, the Parties concerned shall seek through diplomatic channels a settlement of the dispute through negotiation or any other peaceful means of their own choice, including good offices, mediation or conciliation. Failure to reach agreement by good offices, mediation or conciliation shall not absolve Parties to the dispute from the responsibility of continuing to seek to resolve it.

2. When ratifying, accepting, approving, formally confirming or acceding to the WHO CA+, or at any time thereafter, a Party may declare in writing to the Depository that, for a dispute not resolved in accordance with paragraph 1 of this Article, it accepts, as compulsory, ad hoc arbitration in accordance with procedures to be adopted by consensus by the Governing Body.

3. The provisions of this Article shall apply with respect to any protocol as between the Parties to the protocol, unless otherwise provided therein.

Article 34. Depository

1. The Secretary-General of the United Nations shall be the Depository of the WHO CA+ and amendments thereto and of protocols and annexes adopted in accordance with the terms of the WHO CA+.

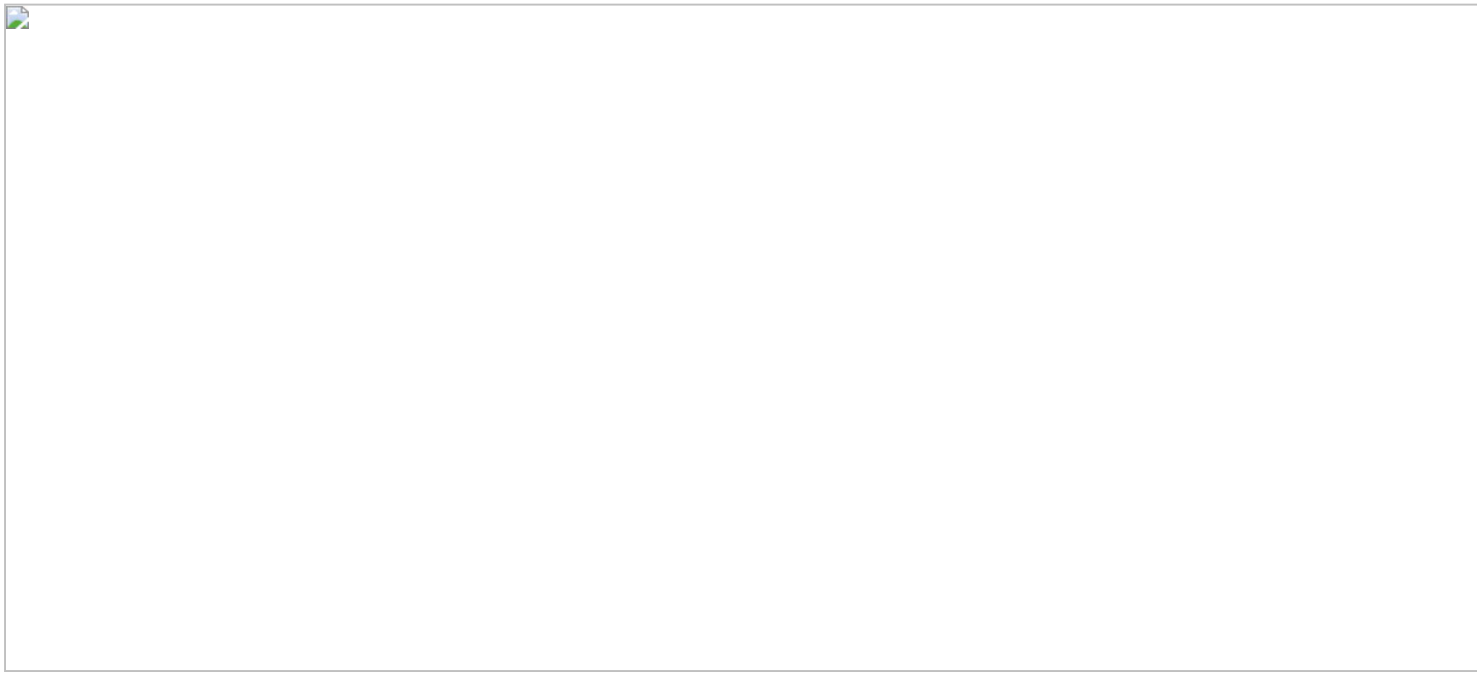
Article 35. Authentic texts

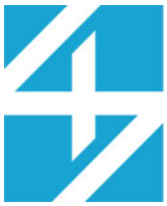
1. The original of the WHO CA+, of which the Arabic, Chinese, English, French, Russian and Spanish texts are equally authentic, shall be deposited with the Secretary-General of the United Nations.

= = =

- Extractions
- Multiple Extractions

- Referring Doctors
  - Referral Form
  - Study Club
  - Links of Interest
- Contact Us
  - Kirkland
  - Monroe
  - Redmond
  - Seattle
  - Patient Feedback





Kirkland Office Phone Number
Kirkland Office
425-821-7979
Redmond Office Phone Number
Redmond Office
425-881-3255
Monroe Office Phone Number
Monroe Office
360-805-5556
Seattle Office Phone Number
Seattle Office
206-215-2088
47 North Oral Surgery Facebook page 47 North Oral Surgery LinkedIn page 47 North Oral Surgery Yelp page

Jerald S. Pruner, DMD

Dr. Pruner has practiced as an oral and maxillofacial surgeon since 2008. He completed a Bachelor of Science in his hometown at the University of Alberta prior to pursuing Dentistry at Case Western Reserve University in Cleveland, Ohio. He completed 4 years of residency training at the University of Washington and the rigorous examination process to qualify for fellowship in the Royal College of Dentists of Canada as a specialist in Oral and Maxillofacial surgery (FRCD).
The pursuit of higher education brought Dr. Pruner back to the Pacific Northwest in 2016. This time it was his wife's desire to pursue a Ph.D. in Rehabilitation Medicine that brought the family back to Washington.
Dr. Pruner is experienced in the full scope of Oral and Maxillofacial Surgery: dental extractions, dental implants, and reconstructive surgery, surgical management of pathology and trauma. He has particular interest and experience in corrective jaw surgery. His expert knowledge in the field is paired with a caring and warm demeanor that patients will appreciate as he helps them navigate their surgical care.
Dr. Pruner has privileges at Swedish Medical Center, UW Northwest Hospital and Evergreen Health Medical Center, as well as Alberta Health Services. He provides both elective and emergent surgical care in hospital and non-hospital settings.
In addition to a busy clinical practice, Dr. Pruner maintains his connection to Edmonton, Canada having an appointment at the University of Alberta in the Faculty of Medicine and Dentistry as a clinical assistant professor.
Away from his professional life, Dr. Pruner enjoys exploring the beautiful Pacific Northwest with his wife and 3 daughters. Golf, water sports, running, and yoga are some of his favorite extracurricular activities.

Meet Us

- Meet the Doctors
  - Adam C. Fettig, DMD
  - Erich B. Naumann, DMD
  - Jerald S. Pruner, DMD
  - Karen S. Zemplenyi, DDS, MD
- Office Tour
  - Kirkland Office
  - Monroe Office
  - Redmond Office
  - Seattle Office

- **First Visit**

Your initial appointment will consist of a consultation explaining your diagnosis and treatment options.

- **Scheduling**

If you have pain or an emergency situation, every attempt will be made to see you that day.

- **New Patient Forms**

You may preregister with our office by filling out our secure online Patient Registration Form.

- **Reviews**

These were submitted directly to us by email, web form, or direct mail... ...he was kind and gentle...

Experienced - Caring - Community Focused
Learn more about Schedule an Appointment

Four Convenient Locations to Serve You

Reset Map

Kirkland Office
12330 120th Ave NE
Kirkland, WA 98034
425-821-7979

Learn more about Get Directions
Redmond Office
15955 NE 85th St, Ste 104
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47 North Oral Surgery Locations:

Kirkland Office
12330 120th Ave NE
Kirkland, WA 98034

Phone: 425-821-7979

Redmond Office
15955 NE 85th St, Ste 104
Redmond, WA 98052

Phone: 425-881-3255

Monroe Office
14090 Fryelands Blvd SE, Ste 190
Monroe, WA 98272

Phone: 360-805-5556

Seattle Office
1221 Madison St. Ste 1116
Seattle, WA 98104

Phone: 206-215-2088

Kirkland Oral Surgeons, Dr. Adam C. Fettig, Dr. Erich B. Naumann, Dr. Jerald S. Pruner and Dr. Karen Zemplenyi, manage a wide variety of problems relating to the mouth, teeth and facial regions. For more information about the oral and maxillofacial surgery services we provide, or to schedule a consultation, call our office in Kirkland, WA at Kirkland Office Phone Number 425-821-7979.

Oral Surgery Treatments

- Dental Implants
- Bone Grafting
- Jaw Surgery
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Alberta Health Services

THIS AMENDING AGREEMENT is dated effective the 1st day of August, 2019 (the "**Agreement**").

BETWEEN:

ALBERTA HEALTH SERVICES

("AHS")

- and -

JERALD S. PRUNER PROFESSIONAL CORPORATION

(the **"Operator"**)

(collectively, the "**Parties**" and each of them, a "**Party**")

RECITALS:

A. The Parties have entered into an Agreement for the Provision of Facility Services Relating to the Oral and Maxillofacial Surgery, referenced as CLM200351, dated May 1, 2014 with Ministerial Order #19/2014, as amended by an agreement dated April 1, 2018 with Ministerial Order #14/2018 (the "**Initial Agreement**").

B. The Parties wish to amend the Initial Agreement on the terms and subject to the conditions set forth in this Agreement.

NOW THEREFORE for good and valuable consideration, the adequacy of which is hereby acknowledged, the Parties hereby agree on the terms and subject to the conditions set forth in this Agreement as follows:

ARTICLE 1
MINISTERIAL APPROVAL

1.1 It is an express condition precedent to this Agreement having any force or effect that the Minister of Health for Alberta shall have approved this Agreement. If this condition is not fulfilled as at the date of this Agreement then, notwithstanding any other provision to the contrary, this Agreement shall not come into effect unless and until the Minister of Health for Alberta's said approval is granted and neither Party shall have rights or obligations relative to this Agreement until that time.

ARTICLE 2
AMENDMENTS

2.1 Amendments to Initial Agreement

(a) To facilitate paying invoices from February and March 2019, Schedule A, Section IV, paragraph (a) is hereby deleted and replaced with the following:

a) For the Contract Year April 1, 2018 to March 31, 2019, the Maximum Contract Value shall be $1,899,362.31.

For the Contract Year April 1, 2019 to March 31, 2020, the Estimated Total Contract Value shall be $1,386,130.00, plus a 30% contingency amount of $415,839.00, for a Maximum Contract Value (defined below) of $1,801,969.00. No portion of the 30% contingency may be billed for without prior written approval from AHS for use of the contingency. Contingency funding is for extenuating purposes only.

ARTICLE 3
GENERAL

3.1 Capitalized Terms

Unless otherwise defined, the capitalized terms used in this Agreement have the respective meanings ascribed to them in the Initial Agreement.

3.2 Effect of Agreement

Other than as expressly provided for herein, this Agreement does not serve to amend any terms or conditions of the Initial Agreement, the terms and conditions of which shall remain in full force and effect otherwise unamended. This Agreement is entered into as a supplementary document to the Initial Agreement and is subject to the other terms and conditions of the Initial Agreement and, in particular, all provisions and terms of general interpretation, construction and application (including but not limited to those relating to governing law, amendments, enurement, calculation of time periods and dispute resolution) are hereby incorporated by reference and deemed to be made a part hereof.

3.3 Entire Agreement

This Agreement and the Initial Agreement and any other agreements and documents that have been, or are required or contemplated to be, delivered pursuant hereto or thereto constitute the entire agreement between the Parties, setting out all the covenants, warranties, representations, conditions, understandings and agreements between the Parties pertaining to the subject matter of the Initial Agreement, and supersede all prior agreements, understandings, negotiations and discussions, whether oral or written.

3.4 Further Assurances

Each Party shall, with reasonable diligence, do all such things, provide all such reasonable assurances and execute and deliver such further documents or instruments as may be required by the other Party in order to give effect to and carry out the provisions of this Agreement or which otherwise may be reasonably necessary or desirable to effect the purpose of this Agreement.

Remainder of page intentionally left blank

3.5 Execution in Counterparts

This Agreement may be executed by the Parties in counterparts and may be executed and delivered by facsimile or other means of electronic transmission and all such counterparts shall together constitute one and the same agreement.

IN WITNESS WHEREOF the Parties have caused this Agreement to be executed by their duly authorized representatives as of the dates set forth below.

ALBERTA HEALTH SERVICES

By: *Original signed*
Name:
Title:
Date:

By: *Original signed*
Name:
Title:
Date:

JERALD S. PRUNER PROFESSIONAL CORPORATION

By: *Original signed*
Name:
Title:
Date:

NEWS & EVENTS

Capt. Stephanie Smith

November 29, 2018

Stephanie Smith is in her final year at the Cumming School of Medicine. Prior to medical school, she was a Critical Care Nursing Officer in the Canadian Armed Forces for 12 years. During that time, she completed two deployments in Afghanistan and a deployment with the Disaster Assistance Response Team to the Philippines following Typhoon Haiyan.

Stephanie was VP External Affairs on the Calgary Medical Student Association, and the student representative on the AMA and the CPSA boards. She is the President of the Canadian Federation of Medical Students and is passionate about promoting physician health and wellness, which lead to her development of the Simulated Training for Resilience in Various Environments (STRIVE) course.

The one thing I love about family medicine is: I love that I have the opportunity to connect with my patients on all aspects of their care, including healthy lifestyle choices and health promotion strategies. The

ability to work with patients in a variety of clinical areas within a rural community is something I am most passionate about. I look forward to my career as a FM physician in the Canadian Armed Forces.

My family medicine mentors are: Dr. Michelle Warren and Dr. Rob Warren

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Profile

Dr. Paul Major

Professor & Department Chair
Department of Dentistry & Dental Hygiene
Division of Orthodontics

Contact Overview Publications Grants

Contact

Email

major@ualberta.ca

Phone

Office: (780) 492-3312

Address

Campus Address: 5-478 Edmonton Clinic Health Academy

Contact details are for academic matters only.

Overview

About Me

Dr. Major completed his Doctorate of Dental Surgery (DDS) at the University of Alberta in 1980. He went on to complete MSc degree and Orthodontic Specialty training at the University of Alberta in 1988. Dr. Major accepted an academic appointment at the University of Alberta in 1989, and has served as Director of the

postgraduate TMD/Orofacial Pain Program from 1991-2001 and as Director of the Orthodontic Graduate Program from 2001-2010. He presently serves as the Professor and Chair, School of Dentistry and Senior Associate Dean (Dental Affairs) at the University of Alberta.

During his academic career, he has published more than 190 publications and supervised the research of more than 75 graduate students. He has presented many lectures at national and international forums. In addition to his responsibilities as Chair of the School of Dentistry, he is continuing with clinical teaching and graduate student research supervision.

Research

- Development and validation of 3D reconstructed images of the craniofacial complex
- Application of diagnostic ultrasound imaging of the periodontal complex
- Orthodontic Biomechanics Research Group - Analysis and prediction of complex orthodontic force systems
    - We have designed, constructed and calibrated an orthodontic simulations system (OSIM) that allows measurement of 3D forces and moments acting simultaneously on all 14 teeth engaged in an orthodontic appliance such as an archwire. We are conducting a series of experiments to analyze force prorogation around the dental arch with various wire/bracket systems in specific malocclusions. We are also conducting a series of experiments to analyze force systems associated with clear aligner orthodontic treatment.
    - We have designed an experimental device to measure in-sit bracket/wire deformation and stress, using high magnification imaging optics and CCD camera system. This is being applied in a series of experiments investigating torque and friction.
- Inter-disciplinary Airway Research Clinic (I-ARC)
  Our interdisciplinary team (pediatric ENT, pediatric pulmonology, radiology, orthodontics, biomedical engineering) evaluate and treat children with sleep disordered breathing (including obstructive sleep apnea). Within this context of patient care we are conducting several research projects including:
    - Evaluation of craniofacial morphology in relation to sleep disordered breathing
    - Evaluation of orthodontic interventions within an interdisciplinary care model
    - Evaluation of CBCT against naso-endoscopy to screen patients at risk for upper airway anatomic insufficiency
    - Evaluation of autosegmentation software application for airway measurements from CBCT images

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Research Keywords

Orthodontic Biomechanics, Ultrasound Imaging, 3D Craniofacial Imaging

Publications

Featured Publications

Joseph Kim

Clinical Associate Professor

joskim@ucalgary.ca

Lynora Saxinger

Associate Professor, Medicine Division of Infectious Diseases

20 September 2018

Infectious Diseases expert Lynora Saxinger is putting the lie to Lyme disease "alternative facts," addressing vaccination misinformation and reducing unnecessary antibiotic use.

Much of Saxinger's work focuses on separating fact from fiction when it comes to infectious diseases such as Lyme disease and influenza. While it is indeed a serious illness, she said, Lyme disease is very rare in Alberta, and easily treated with a readily available oral antibiotic when it does occur. Furthermore, the public pressure from certain movements-including a growing list of for-profit laboratories in the United States and elsewhere that claim to specialize in detecting the tick-borne illness-can lead to misdiagnosis, she said, and improper treatment.

"The standard test we use (in Canada) was developed by the scientists who discovered the bacteria responsible for Lyme disease in the first place," she emphasized, so patients can trust that it's accurate and reliable. On the other hand, some of these non validated tests have been shown to be positive in as many as 40% of people who are perfectly healthy with no suspicion of Lyme disease.

"The misinformation that is sometimes perpetuated by media and various organizations creates a lot of unnecessary fear, and may in fact cause harm because people with other illnesses can be misdiagnosed with Lyme disease and given unnecessary therapy," said Saxinger in a commentary written for U of A publication Folio last fall.

Saxinger's work also focuses on spreading the word about the importance of vaccinations in general, including the fact that an annual flu shot is the best line of defence from the virus.

Profile

Susan Jelinski

Assistant Adjunct Professor
Department of Emergency Medicine

Overview

Overview

About Me

Susan Jelinski is currently appointed as Assistant Adjunct Professor in the Department of Emergency Medicine in the Faculty of Medicine & Dentistry.

Profile

Rafael Figueiredo

Assistant Adjunct Professor
Department of Dentistry

Overview

Overview

About Me

Rafael Figueiredo is currently appointed as Assistant Adjunct Professor in the Department of Dentistry in the Faculty of Medicine & Dentistry.

Dr. Uma Chandran, Edmonton , Alberta

Submit a Rating for Chandran

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Doctor Uma Chandran
Address:
10230 - 111 AVENUE NW ROOM 2243.5
Edmonton
Alberta
T5G 0B7

Phone: (780) 735-6079
Fax: (780) 735-8861

Map

Specialties:
Medical Microbiology

Harbuksh Sekhon

Owner at Gallery Dental

Greater Edmonton Metropolitan Area

1 follower

Join to view profile

University of Manitoba

About

Dr. Harbuksh Sekhon completed his undergraduate (1993) and post graduate (1998) studies at the University of Alberta. Dr. Sekhon completed his Doctor of Medicine in Dentistry in 2003 at the University of Manitoba. Harbuksh is a native of Edmonton, and has successfully built and managed Gallery Dental, one of Edmonton's preeminent general dental practices.

Harbuksh decided to become a dentist after receiving his graduate degree in immunology. Dentistry has become not just his career, but his passion. Dr. Sekhon completes up to 300 hours of continuing education in dentistry a year in a wide range of dental services like dental implantology, periodontics, and orthodontics. Dr. Sekhon will play an integral role ensuring CDS' clinical standards are unmatched in the industry.

DSR KARIS NORTH
CONSULTING INC.
ENGINEERING REIMAGINED

From: Dale J. Richardson, Director
DSR Karis North Consulting Inc.
8 The Green, Ste A
Dover, DE 19901

March 29, 2023

To: Tennessee Law Enforcement

Re: Authorization to start criminal complaints based on research

Dear Law Enforcement Agent,

DSR Karis North Consulting Inc., a Delaware Corporation has attached the report “THE ENGINEERING OF BIOTERRORISM, CHILD TRAFFICKING, TREASON AND THE CRIME OF AGGRESSION UPDATE II” to any Tennessee Law Enforcement agency for the purposes of reporting the criminal activity contained therein or any other unlawful activity in the United States of America, Canada or any other location as needed. Permission is hereby granted for the aforementioned reasons and such actions necessary for reporting crimes outlined in Executive Order on Imposing Certain Sanctions in the Event of Foreign Interference in a United States Election issued September 12, 2018. Authorization is granted to the person delivering this information package to use the information attached to this documentation for the purposes of filing a complaint. Should they choose to give consent, authorization is granted to have any statement they provide to be used as evidence and any other person who chooses to place a statement in support of the complaint made by DSR Karis North Consulting Inc..

Evidence will be pulled from the following files in the jurisdictions mentioned: Chestermere RCMP file# #2020-922562,. Volusia County FL Sheriff file #23-1588 and 23-1430, 2022-1782862, 2023-1169539 forgery, 2023-147546, 2023-179141 human trafficking (RCMP Battleford), 2023-70016 Sexual Assault(RCMP Turner Valley, AB), 2023-111338 human trafficking (RCMP Turner Valley, AB), 23-1588 culpable negligence (covid related), 23-1430 Sexual Assault/human trafficking, 23-1430 Culpable negligence (Volusia County Sheriff, Florida), #223230811 Criminal Harassment/ Human Trafficking agency Assist (Austin Texas Police Department), Calgary Police Service File #22453817 and #22453637, RCMP file 20221414593, 2023-72400 (torture, Chestermere RCMP), 2023-59269, 2023-59284 (Criminal Negligence, Treason Chestermere RCMP), 2022-1715002 (RCMP Alberta), North Charleston Police Department #2022023800 Aggravated Domestic Assault with a Firearm, 2022023857 intimidation of a witness. This can be found from the department) and #23-0011116 Sexual Assault (Austin Police Department). San Antonio PD #22273597. RCMP HQ in Ottawa has been advised to oversee the torture investigations in North Battleford because the torture investigation has been referred to the jurisdiction that tortured the victims. Ottawa has also been advised to overlook criminal intimidation of a witness complaint (RCMP file # 2023-272542) arising from the criminal negligence and treason complaints arising out of the aforementioned research named in this documentation.

Volusia County Sheriff Michael J. Chitwood, Deputy Sheriffs V. Girwood and K. Darcy are named in the complaints. The failure of the Volusia County Sheriff Michael J. Chitwood and the aforementioned Deputy Sheriffs to do their lawful duty has resulted in the commission of both state, federal and international crimes as outlined in the attached documentation. Any failure to properly file the attached documentation will result in prosecution to the fullest extent of the law.

The list of U.S. Complaints sent to the Salt Lake City FBI field office is attached to this letter as was a similar complaint made in Barrie Ontario based on the same information.

Dale J. Richardson
Director
DSR Karis North Consulting Inc.

1. § 39-12-103. Criminal Conspiracy

(a)The offense of conspiracy is committed if two (2) or more people, each having the culpable mental state required for the offense that is the object of the conspiracy, and each acting for the purpose of promoting or facilitating commission of an offense, agree that one (1) or more of them will engage in conduct that constitutes the offense.

(b)If a person guilty of conspiracy, as defined in subsection (a), knows that another with whom the person conspires to commit an offense has conspired with one (1) or more other people to commit the same offense, the person is guilty of conspiring with the other person or persons, whether or not their identity is known, to commit the offense.

(c)If a person conspires to commit a number of offenses, the person is guilty of only one (1) conspiracy, so long as the multiple offenses are the object of the same agreement or continuous conspiratorial relationship.

(d)No person may be convicted of conspiracy to commit an offense, unless an overt act in pursuance of the conspiracy is alleged and proved to have been done by the person or by another with whom the person conspired.

(e)(1)Conspiracy is a continuing course of conduct that terminates when the objectives of the conspiracy are completed or the agreement that they be completed is abandoned by the person and by those with whom the person conspired. The objectives of the conspiracy include, but are not limited to, escape from the crime, distribution of the proceeds of the crime, and measures, other than silence, for concealing the crime or obstructing justice in relation to it.

(2)Abandonment of a conspiracy is presumed if neither the person nor anyone with whom the person conspired does any overt act in pursuance of the conspiracy during the applicable period of limitation.

(3)If an individual abandons the agreement, the conspiracy is terminated as to that person only if and when the person, advises those with whom the person conspired of the abandonment, or the person informs law enforcement authorities of the existence of the conspiracy and of the person's participation in the conspiracy.

(f)It is no defense that the offense that was the object of the conspiracy was not committed.

(g)Nothing in this section is intended to modify the evidentiary rules allowing statements of co-conspirators in furtherance of a conspiracy.

2. § 39-13-101. Assault

(a)A person commits assault who:

(1)Intentionally, knowingly or recklessly causes bodily injury to another;

(2)Intentionally or knowingly causes another to reasonably fear imminent bodily injury; or

(3)Intentionally or knowingly causes physical contact with another and a reasonable person would regard the contact as extremely offensive or provocative.

(b)(1)Assault is a Class A misdemeanor unless the offense is committed under subdivision (a)(3), in which event assault is a Class B misdemeanor; provided, that, if the offense is committed against a law enforcement officer or a health care provider acting in the discharge of the provider’s duty, then the maximum fine shall be five thousand dollars ($5,000).

(2)In addition to any other punishment that may be imposed for a violation of this section, if the relationship between the defendant and the victim of the assault is such that the victim is a domestic abuse victim as defined in §36-3-601, and if, as determined by the court, the defendant possesses the ability to pay a fine in an amount not in excess of two hundred dollars ($200), then the court shall impose a fine at the level of the defendant's ability to pay, but not in excess of two hundred dollars ($200). The additional fine shall be paid to the clerk of the court imposing sentence, who shall transfer it to the state treasurer, who shall credit the fine to the general fund. All fines so credited to the general fund shall be subject to appropriation by the general assembly for the exclusive purpose of funding family violence shelters and shelter services. Such appropriation shall be in addition to any amount appropriated pursuant to §67-4-411.

(c)For purposes of this section and §39-13-102, “health care provider” means a person who is licensed, certified or otherwise authorized or permitted by the laws of this state to administer health care in the ordinary course of business in the practicing of a profession.

3. § 39-13-102. Aggravated Assault

(a)(1)A person commits aggravated assault who:

(A)Intentionally or knowingly commits an assault as defined in §39-13-101, and the assault:

(I)Results in serious bodily injury to another;

(ii)Results in the death of another;

(iii)Involved the use or display of a deadly weapon; or

(iv)Involved strangulation or attempted strangulation; or

(B)Recklessly commits an assault as defined in §39-13-101(a)(1), and the assault:

(I)Results in serious bodily injury to another;

(ii)Results in the death of another; or

(iii)Involved the use or display of a deadly weapon.

4. § 39-13-103. Reckless Endangerment

(a)A person commits an offense who recklessly engages in conduct that places or may place another person in imminent danger of death or serious bodily injury.

5. § 39-13-201. Criminal Homicide

Criminal homicide is the unlawful killing of another person, which may be first degree murder, second degree murder, voluntary manslaughter, criminally negligent homicide or vehicular homicide.

6. § 39-13-202. First Degree Murder

(a)First degree murder is:

(1)A premeditated and intentional killing of another;

(2)A killing of another committed in the perpetration of or attempt to perpetrate any first degree murder, act of terrorism, arson, rape, robbery, burglary, theft, kidnapping, aggravated child abuse, aggravated child neglect, rape of a child, aggravated rape of a child or aircraft piracy; or

(3)A killing of another committed as the result of the unlawful throwing, placing or discharging of a destructive device or bomb.

(b)No culpable mental state is required for conviction under subdivision (a)(2) or (a)(3), except the intent to commit the enumerated offenses or acts in those subdivisions.

(c)A person convicted of first degree murder shall be punished by:

(1)Death;

(2)Imprisonment for life without possibility of parole; or

(3)Imprisonment for life.

(d)As used in subdivision (a)(1), “premeditation” is an act done after the exercise of reflection and judgment. “Premeditation” means that the intent to kill must have been formed prior to the act itself. It is not necessary that the purpose to kill preexist in the mind of the accused for any definite period of time. The mental state of the accused at the time the accused allegedly decided to kill must be carefully considered in order to determine whether the accused was sufficiently free from excitement and passion as to be capable of premeditation.

7. § 39-13-308. Trafficking for Forced Labor or Services

(a)A person commits the offense of trafficking persons for forced labor or services who knowingly:

(1)Recruits, entices, harbors, transports, provides, or obtains by any means, or attempts to recruit, entice, harbor, transport, provide, or obtain by any means, another person, intending or knowing that the person will be subjected to involuntary servitude; or

(2)Benefits, financially or by receiving anything of value, from participation in a venture that has engaged in an act described in §39-13-307.

(b)In addition to any other amount of loss identified or any other punishment imposed, the court shall order restitution to the victim or victims in an amount equal to the greater of:

(1)The gross income or value of the benefit received by the defendant as the result of the victim's labor or services; or

(2)The value of the victim's labor as guaranteed under the minimum wage and overtime provisions of the Fair Labor Standards Act (FLSA), compiled in 29 U.S.C. §201 et seq., or the minimum wage required in this state, whichever is higher.

(c)Trafficking for forced labor or services is a Class C felony.

8. § 39-13-311. Violations by Corporations

A corporation may be prosecuted for a violation of §§39-13-308 and 39-13-309 for an act or omission constituting a crime under this part only if an agent of the corporation performs the conduct that is an element of the crime while acting within the scope of the agent's office or employment and on behalf of the corporation and the commission of the crime was either authorized, requested, commanded, performed or within the scope of the agent's employment on behalf of the corporation or constituted a pattern of illegal activity that an agent of the company knew or should have known was occurring.

9. § 39-16-402. Official Misconduct

(a)A public servant commits an offense who, with intent to obtain a benefit or to harm another, intentionally or knowingly:

(1)Commits an act relating to the public servant's office or employment that constitutes an unauthorized exercise of official power;

(2)Commits an act under color of office or employment that exceeds the public servant's official power;

(3)Refrains from performing a duty that is imposed by law or that is clearly inherent in the nature of the public servant's office or employment;

(4)Violates a law relating to the public servant's office or employment; or

(5)Receives any benefit not otherwise authorized by law.

(b)For purposes of subdivision (a)(2), a public servant commits an act under color of office or employment who acts or purports to act in an official capacity or takes advantage of the actual or purported capacity.

(c)

(1)For purposes of subdivision (a)(5), the ways in which a public servant receives a benefit not otherwise authorized by law include, but are not limited to, a public servant who:

(A)Purchases real property or otherwise obtains an option to purchase real property with intent to make a profit if the public servant knows that such real property may be purchased by a governmental entity and such information is not public knowledge; or

(B)Acquires nonpublic information derived from such person's position as a public servant or gained from the performance of such person's official duties as a public servant and knowingly acts on such nonpublic information to acquire, or obtain an option to acquire, or liquidate, tangible or intangible personal property with intent to make a profit.

(2)Ouster provisions shall be instituted upon a conviction under subsection (a) in which the conduct described in subsection (c) is the basis of the violation. In addition any person convicted of such offense shall forever afterward be disqualified from holding any office under the laws or constitution of this state.

(d)It is a defense to prosecution for this offense that the benefit involved was a trivial benefit incidental to personal, professional or business contact, and involved no substantial risk of undermining official impartiality.

(e)

(1)An offense under subsection (a) in which the conduct described in subsection (c) is not the basis of the violation is a Class E felony.

(2)An offense under subsection (a) in which the conduct described in subsection (c) is the basis of the violation is a Class A misdemeanor and the court shall order appropriate restitution to the governmental entity harmed by the offense.

(3)If the defendant's conduct violates this section and other criminal statutes, nothing in this subsection (e) shall be construed as prohibiting prosecution and conviction for theft or any other such applicable offense in addition to or in lieu of prosecution and conviction for a violation of this section.

(f)Charges for official misconduct may be brought only by indictment, presentment or criminal information; provided, that nothing in this section shall deny a person from pursuing other criminal charges by affidavit of complaint.

10. § 39-16-404. Misuse of Official Information

(a)A public servant commits an offense who, by reason of information to which the public servant has access in the public servant's official capacity and that has not been made public, attains or aids another to attain a benefit.

(b)An offense under this section is a Class B misdemeanor.

11. § 39-16-503. Tampering With or Fabricating Evidence

a. It is unlawful for any person, knowing that an investigation or official proceeding is pending or in progress, to:

1. Alter, destroy, or conceal any record, document or thing with intent to impair its verity, legibility, or availability as evidence in the investigation or official proceeding; or

2. Make, present, or use any record, document or thing with knowledge of its falsity and with intent to affect the course or outcome of the investigation or official proceeding.

12. § 39-17-107. Adulteration of Food, Liquids, or Pharmaceuticals

(a)It is an offense for a person to adulterate any food product or liquid that is manufactured, marketed, grown, or produced for human consumption or any pharmaceutical product that is designed, marketed, or prescribed for the diagnosis or treatment of a disease or medical condition by placing in, mixing with, or adding to the product or liquid, any object, liquid, powder or other substance with the intent to cause bodily injury, serious bodily injury or death to a user of the product or liquid.

(b)(1)A violation of this section where the person intends to cause bodily injury is a Class C felony.

(2)A violation of this section where the person intends to cause serious bodily injury or death is a Class B felony.

13. § 39-13-804. Intentional Release of Dangerous Chemical or Hazardous Material With Intent of Causing Harm

(a)The intentional release of a dangerous chemical or hazardous material utilized in a lawful industrial or commercial process shall be considered use of a weapon of mass destruction when a person knowingly utilizes those agents with intent and for the purpose of causing harm to persons either directly or indirectly through harm to animals or the environment. The release of dangerous chemicals or hazardous materials for any purpose shall remain subject to regulation under federal and state environmental laws.

(b)The lawful use of chemicals for legitimate mineral extraction, industrial, agricultural, commercial, or private purposes, such as gasoline used to power engines or propane used for heating or cooking, is not proscribed by this part.

(c)No university, research institution, private company, individual, hospital, or other health care facility shall be subject to this part for actions taken in furtherance of objectives undertaken for a lawful purpose; provided, that such actions are taken in connection with scientific or public health

research or are necessary for therapeutic or clinical purposes, and, as required, are licensed or registered with the centers for disease control and prevention pursuant to the Code of Federal Regulations (CFR) or other applicable authorities.

14. § 39-13-805. Commission of Act of Terrorism

(a)It is an offense for any person to commit an act of terrorism in this state.

(b)An act of terrorism is a Class A felony.

15. § 39-13-806. Weapons of Mass Destruction

(a)It is an offense for any person, without lawful authority, to possess, develop, manufacture, produce, transfer, acquire, weaponize, or retain any weaponized agent, biological warfare agent, weaponized biological or biologic warfare agent, chemical warfare agent, nuclear or radiological agent, or any other weapon of mass destruction.

(b)A violation of subsection (a) is a Class B felony.

16. § 39-13-807. Provision of Support or Resources to Designated Entity or to Persons Committing or Attempting an Act of Terrorism — Exception

(a)It is an offense for any person to provide material support or resources, or attempt or conspire to provide material support or resources, to:

(1)Any person known by the person providing such material support or resources to be planning or carrying out an act of terrorism in this state, or concealing or attempting to escape after committing or attempting to commit an act of terrorism; or

(2)A designated entity; provided, the person must have actual knowledge that the entity is a designated entity.

(b)A violation of subsection (a) is a Class A felony.

(c)This section shall not apply to any financial service, funds transfer, or securities transaction conducted in the ordinary course of business by a financial institution subject to the information sharing, suspicious activity reporting, or currency transaction reporting requirements of the Bank Secrecy Act, compiled in 31 U.S.C. §5311 et seq., or the U.S.A. Patriot Act (PL 107-56); provided, that any such institution that acts with the intent to assist, aid, or abet any person planning or carrying out an act of terrorism in this state, or concealing or attempting to escape after committing or attempting to commit an act of terrorism, shall remain liable under subsection (a).

(d)A person prosecuted under subdivision (a)(2) shall be afforded the same due process rights as are afforded to persons prosecuted under 18 U.S.C. §2339B.

(e)The district attorney general shall notify the United States department of state, and any other appropriate federal department or agency, of a violation of subsection (a).

17. § 39-13-808. Distribution or Delivery of Any Substance as an Act of Terrorism or as a Hoax

(a)It is an offense for any person to distribute or to deliver, as an act of terrorism or as a hoax, any substance that is intended to, or that such person has reason to believe may, create a fear or

apprehension on the part of any other person that such substance may be a biological warfare agent, a chemical warfare agent, or a nuclear or radiological agent, without regard to whether such substance is in fact a biological warfare agent, chemical warfare agent, or a nuclear or radiological agent.

(b)

(1)A violation of subsection (a) as an act of terrorism is a Class A felony.

(2)A violation of subsection (a) as a hoax is a Class C felony.

(c)In addition to the penalties otherwise provided by law, any person convicted of a violation of subsection (a), either as an act of terrorism or as a hoax, shall make restitution of the costs incurred by any public or private entity or person resulting from such offense.

18. § 39-13-810. Forfeiture of Property Associated With Terrorist Acts

(a)All property, both personal and real, including money, vehicles, and other property used, or intended for use, in the course of, derived from, or realized through conduct in violation of this part, is subject to seizure and forfeiture to the state.

19. § 39-13-812. Immunity for Report of Suspicious Activity or Behavior

a. A person who in good faith makes a report of suspicious activity or behavior shall be immune from civil and criminal liability for the making of the report if the report is based on articulable suspicion.

b. As used in this section, “report of suspicious activity or behavior” means any communication to a law enforcement officer or agency or other appropriate authority of the behavior or activity of another person if the report is made with the articulable belief that the behavior or activity constitutes or is in furtherance of an act of terrorism.

c. This section shall not apply to the intentional making of a report known to be false, including a violation of § 39-16-502, or to a report made with reckless disregard for the truth of the report.

DSR Karis Consulting Inc.

ENGINEERING REIMAGINED

From: Dale J. Richardson, Director
DSR Karis Consulting Inc. AB Office
116 West Creek Meadow,
Chestermere, AB

March 16, 2023

To: Barrie Police Service Headquarters
110 Fairview Road,
Barrie, ON L4N 8X8

And Ontario Provincial Police
Nottasawaga Detachment
4601 Industrial Parkway
Alliston, Ontario L9R 1V4

Re: Request for Complaints and Authorization for use of Evidence

Dear agent of the Barrie Police Service and Ontario Provincial Police,

DSR Karis Consulting Inc. ("DSR Karis"), a federal corporation extra provincially registered to operate in the province of Alberta and Saskatchewan is presenting to you this attached report "THE ENGINEERING OF BIOTERRORISM, CHILD TRAFFICKING, TREASON AND THE CRIME OF AGGRESSION UPDATE II (A PRELIMINARY REPORT AND ANALYSIS OF RISK)". This is an official request to report the forgoing crimes and any other crimes contained within the documentation. The director was unable to personally bring this complaint due to being tortured multiple times in Canada and the United States to hinder presenting this evidence. Authorization has been given to Dan Hartman to transport this evidence to you and for Mr. Hartman to use this evidence for the purposes of filing his own criminal complaints. If Mr. Hartman chooses to consent, his statement can be used for the DSR Karis complaint.

A request for criminal negligence complaints against the federal and provincial minister of health and any other provincial, and municipal counterparts, agents and/or affiliates is requested. The Public Health Agency of Canada has issued criminally negligent engineering guidelines for Aerosol Generating Medical Procedures guidance that have introduced a critical weakness into the infrastructure of Canada that is an act preparatory to levying war and is prohibited by the criminal code.

The Medical professionals in the attached documentation has demonstrated that SARS-Cov-2 is the product of gain of function research and they must be consulted for further investigation. Request information from the following files for more information: Chestermere RCMP file# #2020-922562. Volusia County FL Sheriff file #23-1588 and 23-1430, 2022-1782862, 2023-1169539 forgery, 2023-147546, 2023-179141 human trafficking (RCMP Battleford), 2023-70016 Sexual Assault(RCMP Turner Valley, AB), 2023-111338 human trafficking (RCMP Turner Valley, AB), 23-1588 culpable negligence (covid related), 23-1430 Sexual Assault/human trafficking, 23-1430 Culpable negligence (Volusia County Sheriff, Florida), #223230811 Criminal Harassment/ Human Trafficking agency Assist (Austin Texas Police Department), Calgary Police Service File #22453817 and #22453637, RCMP file 20221414593, 2023-72400 (torture, Chestermere RCMP), 2023-59269, 2023-59284 (Criminal Negligence, Treason Chestermere RCMP), 2022-1715002 (RCMP Alberta), North Charleston Police Department #2022023800 Aggravated Domestic Assault with a Firearm, 2022023857 intimidation of a witness. This can be found from the department) and #23-0011116 Sexual Assault (Austin Police Department). San Antonio PD #22273597. RCMP HQ in Ottawa has been advised to oversee the torture investigations in North Battleford because the torture investigation has been referred to the jurisdiction that tortured the victims. Ottawa has also been advised to overlook criminal intimidation of a witness complaint (RCMP file # 2023-272542) arising from the criminal negligence and treason complaints arising out of the aforementioned research named in this documentation.

Dale J. Richardson
Director

Statement of DSR Karis Consulting Inc.
by Dale J. Richardson, Director
For OPP and Barrie Police Service

1. I Dale J. Richardson the sole director of DSR Karis Consulting Inc. and making a statement for OPP and Barrie Police Service.

2. I am a mechanical engineering technologist with a Bachelor of Technology in Engineering and Applied Science from Memorial University of Newfoundland. I pioneered research into HVAC infection controls relative to the SARS-Cov-2 pandemic over the course of my degree. The research that I conducted over the course of my degree is the basis for this complaint. The research papers that were done during my Bachelor of Technology degree are published by Dorrance Publishing under the title COVID-19 and Negligent Engineering Practices; "Will This Kill People?: A Collection of Studies on HVAC Infection Controls Relating to COVID-19. This research is already available to the public.

3. Since the initial complaints were made on July 3, of 2020 I was unable to return to make a statement in relation to this matter for a number of reasons that are outlined in some related file numbers that will be listed at the end of the statement.

4. I have attached the written section of "The Engineering of Bioterrorism, Child Trafficking, Treason and the Crime of Aggression Update II (a preliminary report and analysis of risk) that is protected by United States copyright it is in the process of being published.

5. The basis of the criminal negligence complaint is that a hazard that increased the risk of injury and death was deliberately introduced into the infrastructure in the province of Ontario by the Royal College of Dental Surgeons of Ontario, and specifically in the City of Barrie and other areas under the jurisdiction of the Barrie Police Service, and province wide under the jurisdiction of the Ontario Provincial Police.

6. The Criminal code defines criminal negligence as: 219 (1) Every one is criminally negligent who

7. (a) in doing anything, or

8. (b) in omitting to do anything that it is his duty to do,

9. shows wanton or reckless disregard for the lives or safetyof other persons

10. Duty is defined as 2) For the purposes of this section, duty means a duty imposed by law.

11. There is a lawful duty for the Royal College of Dental Surgeons of Ontario to practice within the scope of their field which is in the area of health and not in the engineering sciences. The engineering sciences fall under the responsibility of engineers and technologists and their bodies. Professional Engineers Ontario (PEO) are at

Statement of DSR Karis Consulting Inc.
by Dale J. Richardson, Director
For OPP and Barrie Police Service

the forefront of those responsible for engineering provincially and Engineers Canada federally. Both Engineers Canada and PEO have failed to regulate the profession of engineering in a manner that is in the public interest and have deliberately caused increased risk of injury and death by allowing Royal College of Dental Surgeons of Ontario and the Public Health Agency of Canada to issue engineering controls for the SARS-Cov-2 pandemic. Rather than act within the public interest, nothing was done. Both PEO and Engineers Canada and their agents and/or affiliates failed to provide proper guidance with respect to HVAC engineering controls.

12. These actions mirrored what was done in the province of Saskatchewan and Alberta. This failure was also noted in the United States.

13. The research provided with this complaint is in the process of being published. It is protected by U.S. copyright and sits in the library of congress.

14. Brenda Lucki and RCMP HQ has received much of this information as had the Civilian Review and Complaints Commission.

15. The CRA's Tax Fraud division in Mississauga has also received a substantial amount of this information and done nothing with it, as multiple parties in Ontario are participating in tax fraud. Evidence of this is contained in the multiple file numbers provided below and all the evidence can be pulled from all of them.

16. Corporations Canada has refused to give corporate keys to DSR Karis Consulting Inc. and DSR Karis Inc. And has concealed evidence of these crimes that has affected the city of Barrie and the Province of Ontario.

17. The Ottawa Police Service has received a similar set of information which has been included with the evidence contained with this statement. The mail receipt has also been included as evidence, as what was provided to the FBI field office in Salt Lake City Utah.

18. Engineers Canada and the PEO are aware of my research and have been for some time. I am currently being unlawfully attacked in the trademark opposition board by Engineers Canada who is supported by the PEO. I have attached some related documentation to this complaint. This unlawful attack was made possible by the Federal Court of Canada and many of the agents who forged documents, committed fraud, facilitated human trafficking, suppressed information that demonstrated how a biological weapon could be distributed and made to look like a random outbreak, torture, murder, attempted murder and other gross crimes. Emily Price who was the case management agent for T-1404-20 had a large part in this matter as does a long list of judges in and out of Ottawa including the Chief Justice of the Federal Court of Canada, Chief Justice Paul S. Crampton and his agent Klara Trudeau. This information can be pulled from the RCMP files listed below. The contact for the Chestermere files is Cpl. Scott Smith.

Name _____ Witness _____ 03/16/23

Statement of DSR Karis Consulting Inc.
by Dale J. Richardson, Director
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19. Not one shred of evidence has ever been brought by any engineering body to refute the evidence presented and much of the research that i conducted was done during the course of my degree and half of it was graded by my program head for the Bachelor of Technology program at Memorial University. His name is Darrell Wells. Darrell Wells is a professional engineer. Darrell Wells has indicated to me that he would be a reference for me for a masters degree program. The research that forms a part of the published research papers received a cumulative 4.0 GPA. If there were things wrong with it there would have been an obligation for my instructors to inform me of errors in the research in which I was conducting. The technological assessment received an overall grade of 97%.

20. In fact every person who had an obligation to take action if what I was presenting either for myself or for DSR Karis Consulting Inc. Either did not or could not. My research have been placed in the hands of other engineers and technologists who have indicated to me that it was right.

21. Assistant Deputy Attorney General Lynn Lovett acting for David Lametti knowingly committed fraud and participated in facilitating torture contrary to 269.1 of the criminal code and other heinous crimes to facilitate the distribution of a biological weapon.

22. The declaration that no "fallow times" or settling times is required between patience with Covid-19 is not supported by any engineering science and is not within the scope of the practice of the Royal College of Dental Surgeons of Ontario to make. Evidence has been presented that aerosols are a means of transmission for what has been termed as covid-19. Other deadly pathogens can be transmitted through aerosols and not properly mitigating these is also introducing a critical weakness into the province of Ontario. Ontario is the most populous province in Canada and it is the economic and the seat of the federal government. Making Ontario more susceptible to biological attack is an act preparatory to levying war both in the province and federally. If I wanted to distribute a biological weapon and make it look like a random outbreak, I could issue guidelines in that manner to accomplish that. I base that assertion on the research that I pioneered and I am the expert in that area. I have worked on this research the last three years and the file numbers for the crimes are a result of reporting the research. There is a well documented history of what has happened as a result of presenting this evidence.

23. Kaysha Richardson an American Indian born in Canada was sexually assaulted repeatedly, kidnapped, trafficked, tortured and subjected to other heinous crimes to prevent this information from coming out. Kaysha is still in the United States.

24. The hierarchy of risk in an occupational health and safety setting has been deliberately compromised. No measure provincially and federally are valid and are a result of deliberate introduction of known hazards and must be investigated. Every measure introduced from the engineering controls must be investigated as does the

engineering bodies responsible for regulating engineering on a provincial and federal level. The regulatory bodies for physicians and dentists must also be investigated for engaging in practising engineering and engineering technology when it is beyond the scope of their practice. This introduction of risk and the obvious conspiracy and a criminal organization as defined in the criminal code gives the basis for every death arising from the covid response to be rightly investigated as murder.

25. The main issue with the engineering controls is that it introduces an unknown into the system that cannot be accounted for. It will create an unknown number of failures into the system. In a worst case scenario a biological agent can be introduced and made to look like a random outbreak. This is a critical weakness that cannot be ignored. The risk for loss of life is extremely high. The when I questioned the Saskatchewan Health Authority (SHA) regarding the engineering controls in the spring of 2020, the SHA could provide no analysis of risk for their guidelines either. This guideline was used federally and also affected the province of Ontario. This is not accidental it is deliberate. In fact it is impossible that this is accidental. It is like having 100 teachers in random locations in North America all grading 2+2 =5. That is impossible and if it happens it was done deliberately. The section on the analysis of risk outlines some of the issues that arose as a result of the presentation of the evidence. Related files for criminal negligence are 2023-59269 and 2023-59284 started at the Chestermere RCMP in the K-Division and 23-1588 a culpable negligence complaint made by DSR Karis North Consulting Inc. In Volusia Country by the local Sheriffs office. Both files will have information that is related to the case that started in North Battleford.

26. I have spoken to other professionals that have outlined that hazards have been introduced into other areas that fall under their expertise and I am collecting the information for the purposes of a multi-disciplinary report outlining hazards at the different stages of the Covid-19 response in Saskatchewan, and other provinces in Canada, in the United States and probably other places. With organizations such as the World Health Organization using the same negligent guidance that was issued by the CDC and changed in 2003 during the SARS outbreak. Documented research demonstrated that SARS in 2002-2003 was spread through aerosols as well. For example in Hong Kong it was found that the negative pressure from bathroom fans pulled up aerosols through drains and spread contagions and the PHAC recommends running bathroom fans continuously. There are numerous instances of things that will facilitate the spread of disease and not mitigate it.

27. Some of the other relate file numbers that are related to the case as other matters that have hindered the reporting or may have been retaliation for reporting these crimes or are in some way related to the crimes are as follows: 2022-1782862 (RCMP Battleford), 2023-70016 Sexual Assault(RCMP Turner Valley, AB), 2023-111338 human trafficking (RCMP Turner Valley, AB), 23-1430 Sexual Assault/human trafficking (Volusia County

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Sheriff, Florida), #223230811 Criminal Harassment/ Human Trafficking agency Assist (Austin Texas Police Department), Calgary Police Service File #22453817 and #22453637, RCMP file 20221414593, North Charleston Police Department #2022023800 Aggravated Domestic Assault with a Firearm, 2022023857 intimidation of a witness (I can't exactly remember what the SC criminal term was. This can be found from the department) and #23-0011116 Sexual Assault (Austin Police Department). San Antonio PD #22273597. I was recently intimidated by agents of the SHA and RCMP for making complaints against them the related file number for the initial criminal intimidation file is 2023-272452. I was further intimidated when CST. A. SMITH and CST. NEUFELD intimidated me for making the aforementioned intimidation complaint. Evidence has been submitted but I have not received the file number as yet.

Name _____ Witness _____ 03/16/23

COVID-19 Frequently Asked Questions

Our Practice Advisory Service receives many emails and phone calls daily from dentists and the public about COVID-19. Below is a list of FAQs with up-to-date information, compiled by the Practice Advisory team.

A list of FAQs for dentists who are considering performing Antigen POCT in their practice is available here.

A list of FAQs on vaccination status for COVID-19 and how dental offices should handle this topic is available here.

Updated October 14, 2022

Is a fallow period required following non-aerosol (NAGP) or aerosol generating procedures (AGP)?

No, a fallow period is not required following non-aerosol or aerosol generating procedures (NAGP), regardless of patient screening results. Empirical evidence has not been identified that supports the protective value of fallow time for COVID-19. Following these procedures, the operatory may be cleaned and disinfected as per the College's IPAC Standard in preparation for the next patient.

Do AGPs need to be performed in enclosed operatories?

No. Enclosed operatories are no longer required EXCEPT when treating a patient who is suspect or confirmed COVID-19 positive. Patients that are suspected or confirmed COVID-19 positive must be treated in an enclosed operatory for aerosol-generating procedures (AGPs).

An enclosed operatory is one that is capable of containing the aerosol, which means floor-to-ceiling walls and a door or other barrier that can be closed.

Temporary walls and doors are permitted, provided they create an area to contain aerosols and are constructed of materials that can withstand repeated cleaning and disinfection.

Am I required to keep any enclosed rooms?

Given the continued risk of a new variant of concern as well as the potential for future pandemics, the College recommends that dentists maintain capacity for enclosed operatories even if they are not providing care to COVID-19 positive patients. This can be achieved by maintaining some existing enclosed operatories or by ensuring that temporary barriers can be reconstructed quickly if required.

What should I consider to improve office ventilation?

professionals who have experience with health care settings when considering changes to HVAC systems and equipment.

Resource: Use of Portable Air Cleaners and Transmission of COVID-19 (publichealthontario.ca)

Do I still need to continue to screen patients?

Yes, all patients must be screened prior to entering the dental office. Dentists may either use the Ministry's Covid-19 self-assessment tool or the ODA's printable version of the screening tool available here.

Please note*

- Patients who have tested positive for Covid-19 but who are asymptomatic may not been directed to self-isolate by the Ministry's online screening tool. As a result, dentists may not be able to rely solely on the screening results to determine whether in-person care can be provided but may instead need to ask the patient directly whether they have tested positive within the past 10 days.

- Patients who have COVID-19 symptoms **OR** a positive COVID-19 test (PCR, rapid molecular or rapid antigen test) must not be treated in-person except for emergent or urgent care.

The screening result needs to be documented in the patient record.

Is staff screening still required?

No. The MOH no longer requires staff to be screened using the MOH worker screening tool. Dentists must continue to follow the College's current IPAC Standard which requires staff to self-monitor for symptoms of severe respiratory illness such as COVID-19.

How do we manage patients who have COVID-19 symptoms OR a positive COVID-19 test?

Symptomatic patients or those with a positive Covid-19 test must only be seen in-person for care that is urgent or emergent: Non-urgent or non-emergent care must be deferred.

When in-person care cannot be avoided, dentists must adhere to the following additional requirements:

- the patient's appointment must be scheduled at the end of the day (if possible) to decrease the risk to other patients,
- the patient must don a mask prior to entering the office
- the patient must be placed immediately into an enclosed operatory alone with the door closed.
- dentists must avoid AGPs except as needed for emergency or urgent care that cannot be delayed.
- where AGPs cannot be avoided, they must be performed in an operatory that is capable of containing aerosols.
- dentists must use the lowest aerosol-generating options available.
- dentists are advised to use a rubber dam with high-volume suction to minimize aerosols whenever possible

May I treat an asymptomatic patient that has had close contact with a suspected COVID-19 case?

Please refer to page 22 in this Ministry of Health document: Management of Cases and Contacts of COVID-19 in Ontario

For further information please contact your local public health unit directly.

How should I manage patients and/or staff who have returned to Canada from international travel?

The Government of Canada determines the rules for entering Canada, including individuals who are fully vaccinated.

Travelers are required to follow federal guidelines. For more information:

COVID-19: Travel, testing and borders - Travel.gc.ca

Are we allowed to use sedation?

First confirm sedation is required and that the treatment cannot be provided without it.

Technique

Oral sedation used alone can be a sedative technique that minimizes aerosols vs. other sedative techniques. However, patient acceptance and an effective dose is key to prevent coughing, crying etc. that could also create more aerosols with any conscious sedation technique. You must stay within your level of authorization for the sedation dose provided.

Nitrous Oxide Oxygen

If oral sedation alone is not sufficient and nitrous oxide oxygen is used, a viral filter may be placed between the tubing and the machine. However, all delivery systems are different and one technique does not fit or apply to all systems. Check with the manufacturer on what is necessary to guard against viral transmission. You are responsible for ensuring the system is sterilized for viruses in between patient use as suggested by the manufacturer of the delivery system that you have.

Monitoring and Emergency Equipment

Use disposable emergency equipment where possible. All equipment for patient monitoring must be cleaned and disinfected according to manufacturer's instructions for use. In the unlikely event of cardiopulmonary resuscitation, a viral filter should be placed on the bag-valve-mask to protect the equipment from contamination if used. If oxygen delivery is required, it is advisable to use disposable nasal cannula/nasal hood or other oxygen delivery device. All tubing should be properly cleaned and disinfected as per the manufacturer's instructions for use. Try to limit gas flows to the minimum required to prevent surplus gas from the patient contaminating the air. Similarly ensure the nasal hood fits snugly, to minimize gas leaks.

Are patients required to wear masks at a dental office?

As of June 11th, 2022, all mask mandates have been lifted for indoor settings with the exception of long-term care and retirement homes

Although mask mandates have been lifted, the Chief Medical Officer of Health continues to strongly recommend that patients and visitors continue to wear masks in all health care settings. Dentists can continue to implement masking policies that ask all patients, and visitors to wear a mask when in the office.

Patients who are suspected or confirmed COVID-19 positive, must wear a minimum ASTM Level 1 procedure mask prior to entering the office

Are visitors in treatment areas required to wear masks?

Dentists are advised to conduct a risk assessment for each visitor in the treatment area. They will need to take into account:

- the type of procedure (AGP vs. non-AGP)
- the patient and visitor screening results
- whether the visitor is a member of the patient's household
- whether the office setting allows appropriate distancing

If the risk assessment indicates that the visitor may be at an increased risk of infection then a non-fit-tested N95 respirator (or equivalent) is required.

Reference: Interim IPAC Recommendations for Use of Personal Protective Equipment for Care of Individuals with Suspect or Confirmed COVID 19 (publichealthontario.ca)

What if a patient refuses to wear a mask?

If you have a policy that asks patients to wear masks, patients should adhere to that policy. Some patients may request an exemption from the mask requirement. In these cases, dentists are expected to offer appropriate accommodations to ensure care can be safely provided.

Dentists should not refuse to provide care to patients that refuse to wear masks.

Are dental staff still required to wear masks?

Yes. Currently, all health care workers, including dental staff, are required to follow routine practices which includes universal medical masking, at all times, while in the office except for the purpose of eating and drinking.

Please see the PPE table for task specific masking requirements.

Are N95s required in the reprocessing area?

When you are reprocessing and aerosols are anticipated (e.g., if using ultrasonics or handpiece lubricating devices) and you can mitigate the aerosols by containing them within the unit, then you are not required to use an N95 respirator or equivalent.

If aerosols cannot be mitigated, then the staff person generating the aerosol must don an N95 respirator or equivalent.

If no aerosols are anticipated or if you are able to mitigate the aerosol, then an ASTM level 2–3 mask is required

Yes. N95 respirators require a tight fit for protection against aerosols. Fit testing is required for each clinical staff member and for each brand or model of N95 respirator. In other words, the fit test is only applicable to the specific respirator model, unless the manufacturer indicates otherwise.

How often do I need to complete a fit test?

The CSA requires fit testing to be done every two years or sooner if recommended by the manufacturer. Also, if your weight changes or facial/dental alterations occur, a fit test should be done again to ensure your respirator remains effective.

Where can I get information or training on fitting N95 respirators?

A list of companies that provide fit testing can be found on pages 5-7 of the MOH . In addition, the below list of companies also provide this service:

- EKG Inc. (Occupational Health and Safety Training | EKG Inc.)
- Hot Zone Training Consultants Inc. (Health and Safety Training | Expert Consultants and Trainers | Hot Zone Training)
- Martech Group (Respirator Fit Testing – Martech Group Inc.)
- Enviro EH&S Consulting Inc. (Respirator Fit Testing | Enviro EH&S Consulting Inc (enviroehs.com))
- Partner Safety (Safety and Rescue Training and Services | Partner Safety)
- GEM Health Care Services (GEM Health Care Services)

For additional information about fit testing 3M offers a fit test kit for sale.

Note: The College does not endorse any particular company, but provides this information to assist dentists. Some companies may have suspended in-person fit testing, while others are assessing each request individually. Dentists must provide their own N95 masks for fit testing.

Please contact the manufacturer or refer to the Manufacturer's Instructions for Use (MIFUs) if you have any technical questions.

Can I reuse or extend the use of N95 respirators?

N95 respirators (and equivalents) are single use items, however, Public Health Ontario has indicated that extended use and re-use is permitted in select instances. Extended use refers to the practice of wearing the same N95 respirator for more than one patient, without removing/touching the respirator between patient encounters, while re-use refers to the practice of using the same N95 respirator for multiple patient encounters and removing it between the patient encounters.

Click here for more information.

If you are having difficulty procuring N95 respirators, please contact the ODA at info@oda.ca.

The Government of Ontario, through a partnership with the Ontario Dental Association, is providing 3M Aura Health Care Particulate Respirator and Surgical Masks 1870+ N95 to dental professionals free of charge

Can we use KN95, P95, P100 or other "equivalent" masks instead?

Health Canada accepts the NIOSH certification as an appropriate quality standard for N95 respirators. Equivalent alternate standards are also acceptable.

These include respirators that are approved or certified under standards used in other countries that are similar to NIOSH-approved N95 respirators.

Health Canada maintains a list of NIOSH N95 alternatives.

Prior to selecting a respirator, dentists should review Health Canada's respiratory guidance or check Public Health Ontario for selection guidance.

What type of dental procedures require dentists to wear gowns?

Isolation gowns are required for ALL aerosol-generating procedures performed on ALL patients, regardless of whether they have tested or confirmed positive or negative for COVID-19.

Isolation gowns are also required for non-aerosol generating procedures performed on patients with suspect or confirmed COVID-19

Isolation gowns are optional for non-aerosol generating procedures performed on patients who have screened or tested negative for COVID-19.

Gowns must be changed after each patient use. For more information on gowns:

Health Canada Personal protective equipment against COVID-19: Medical gowns

Medical Isolation Gowns for COVID-19 in Health Care Settings

Can dentists and their staff use washable/reusable gowns instead of disposable gowns?

Yes, both disposable and reusable/washable gowns are acceptable. As with any personal protective equipment (PPE), attention must be paid to the donning and doffing procedure in order to avoid contaminating the user.

For more information on donning and doffing of PPE, click here.

Reusable/washable gowns must be changed and laundered after each patient use.

Please note: reusable/washable gowns must be laundered either on-site or at a commercial laundry facility. Home laundering is not permitted.

Public Health Ontario (Best Practices for Environmental Cleaning for Prevention and Control of Infections in All

- There must be a dedicated space, physically separate from other areas of the laundering facility.
- The space must contain a sorting area for soiled items that is kept under negative pressure.
- If the dental office is unable to comply with these requirements, another option is to use a commercial laundry service.
- Household laundering and laundromats do not meet these requirements.
- While awaiting on-site laundering or pickup for transportation to a commercial laundry facility, reusable/washable gowns should be stored in laundry bins/containers lined with a barrier (such as a garbage bag) to avoid contamination.
- For on-site laundering, use hot water and an appropriate detergent. If the items are heavily soiled, a disinfectant (e.g. chlorine bleach) may be added.

Scrubs worn as clinic attire may be laundered at home.

Can I use a fabric lab coat instead of a gown?

The use of lab coats instead of gowns is discouraged and should only be used as a last resort because they do not provide the same degree of protection. Most lab coats have V-necks and/or do not have elastic bands at the wrists. Because of their design, they can expose the healthcare worker's skin/clothing at the neck and wrist area.

The front buttons of lab coats can also pose risks of contamination during the donning and doffing procedures.

In the event of a disposable gowns shortage, reusable gowns would be the preferred alternatives.

References:

US Centers for Disease Control and Prevention – Strategies for Optimizing the Supply of Isolation Gowns

Public Health Ontario - Recommended Steps for Putting On and Taking Off Personal Protective Equipment

COVID-19: Managing infection risks during in-person dental care

Dentists are expected to continue to follow RCDSO's Standard of Practice on Infection Prevention and Control (IPAC) as well as the revised guidance specific to COVID-19 described below. This revised guidance anchors to key external resources, including those of Ontario's public health authorities (see *relevant links*).

Updated October 14, 2022

Office precautions

Office setup

1. RCDSO recommends that dentists continue to post signage in common areas outlining office policies for patients and visitors (e.g., office policies for patient and/or visitor masking and instructions for patients who are experiencing symptoms of COVID-19).
2. RCDSO recommends that dentists maintain physical barriers at key contact points to reduce the spread of droplets (e.g., a plexiglass shield at reception).

Screening

3. All patients and visitors must be screened for COVID-19 prior to entering the office using the COVID-19 self-assessment tool (printable version available here).
    - Dentists must ensure that all screening results are recorded and retained in accordance with the requirements for administrative or office records set out in RCDSO's Dental Recordkeeping Guidelines.

Personal precautions

Risk assessment

A point of care risk assessment (PCRA) is the first step in routine practices and must be performed prior to all patient interactions. The PCRA will inform the interventions that are necessary to prevent the transmission of infection, including requirements for personal protective equipment (PPE).

4. Masking is no longer mandatory for all patients and visitors except as may be indicated by the PCRA and where noted in RCDSO's *PPE Table*.
    - For more information about patient and visitor masking see RCDSO's COVID-19 FAQ.
5. Dentists and staff must continue to don masks and all other necessary PPE as set out in RCDSO's *PPE Table*.

General requirements

6. Patients with suspected or confirmed COVID-19 must not be treated in-person except as needed for emergency or urgent care that cannot be delayed.
    - Patients should be advised to follow the Ministry of Health's guidance for self-isolation and contact their primary care provider or Telehealth Ontario at 1-866-797-0000 to determine next steps.
7. When in-person care cannot be avoided, dentists must adhere to the following additional requirements:
    - the patient's appointment must be scheduled at the end of the day (if possible) to decrease the risk to other patients,
    - the patient must don a mask prior to entering the office (see RCDSO's PPE Table), and
    - the patient must be placed immediately into an operatory alone with the door closed.

Aerosol-generating procedures (AGPs)

The following guidance has been updated after a careful review of the available evidence, in consultation with external subject matter experts, and in partnership with Ontario's other regulated oral health professions:

- All requirements for fallow time have been rescinded
- Enclosed operatories are required only for the treatment of patients with suspected or confirmed COVID-19

Given the continued risk of a new variant of concern as well as the potential for future pandemics, the College recommends that dentists maintain capacity for enclosed operatories even if they are not providing care to COVID-19 positive patients. This can be achieved by maintaining existing enclosed operatories or by ensuring that temporary barriers can be reconstructed (see RCDSO's COVID-19 FAQ for more information)

8. If a patient is suspected or confirmed COVID-19 positive, dentists must avoid AGPs except as needed for emergency or urgent care that cannot be delayed.
9. When care cannot be delayed, dentists must use the lowest aerosol-generating options available.
10. AGPs must be performed in an operatory that is capable of containing aerosol. This requires floor-to-ceiling walls and a door (or other barrier) that must remain closed during the procedure. Temporary walls and doors are permitted, provided they contain aerosols and are constructed of materials that can withstand repeated cleaning and disinfection.
11. Dentists are advised to use a rubber dam with high-volume suction to minimize aerosols whenever possible.
12. Dentists must ensure that operatories are cleaned and disinfected between each patient appointment.

Requirements for the Use of Personal Protective Equipment (PPE)

The requirements set out in this table align with the applicable recommendations of the Ministry of Health and Public Health Ontario as set out in:

- MOH: COVID: 19 Guidance: Personal Protective Equipment (PPE) for Health Care Workers and Health Care Entities
- PHO Technical Brief: Interim IPAC Recommendations for Use of Personal Protective Equipment for Care of Individuals with Suspect or Confirmed COVID-19

Dentists and Staff	
Non-aerosol generating procedures (NAGPs) when the	ASTM level 2 or 3 procedure/surgical mask

	· Eye protection: goggles or face shield · Isolation gown (optional)
Non-aerosol generating procedures (NAGPs) for patients with suspected or confirmed COVID-19	· N95 respirator (fit-tested, seal-checked), or the equivalent, as approved by Health Canada · Gloves · Eye protection: goggles or face shield · Isolation gown
Aerosol generating procedures (AGPs) when the patient has screened negative for COVID-19.	· N95 respirator (fit-tested, seal-checked), or the equivalent, as approved by Health Canada · Gloves · Eye protection: goggles or face shield · Isolation gown
Aerosol generating procedures (AGPs) for patients with suspected or confirmed COVID-19.	· N95 respirator (fit-tested, seal-checked) or the equivalent, as approved by Health Canada · Gloves · Eye protection: goggles or face shield · Isolation gown
Cleaning and disinfection of operatory or other treatment area	· Minimum ASTM level 1 procedure mask · Gloves · Eye protection: goggles or face shield
Reprocessing of reusable instruments (reprocessing area)	· ASTM level 2 or 3 procedure/surgical mask (for those activities that are aerosol-generating: a fit-tested, seal-checked N95 respirator or the equivalent, as approved by

	· Heavy duty utility-gloves · Eye protection: goggles or face shield · Isolation gown · Minimum ASTM level 1 procedure mask
Reception duties and screening	· Physical barrier recommended
Administrative and other tasks (common and staff areas)	· ASTM level 1 procedure mask
Patients and Visitors	
Patients who are suspected or confirmed COVID-19 positive	· Minimum ASTM Level 1 procedure mask prior to entering the office · N95 respirator (non-fit tested) or the equivalent, as approved by Health Canada; and
Visitors present during an AGP (e.g., a parent, caregiver, or personal support worker)	· eye protection: goggles or face shield

Relevant links

- Definitions of emergency, urgent and non-emergent and non-urgent care
- RCDSO: Guidance for Patients who are not Wearing a Mask
- RCDSO: COVID-19 FAQs.
- RCDSO: Guidance for the Use of Teledentistry.
- RCDSO: Infection Prevention and Control Standard of Practice.
- COVID-19 Operational Requirements: Health Sector Restart.
- Public Health Ontario: Considerations for Community-Based Health Care Workers on Interpreting Local Epidemiology.
- Ministry of Health: COVID-19 Patient Screening Tool.
- Ministry of Health: Worker Screening
- Ministry of Health: Management of Cases and Contacts of COVID-19 in Ontario.
- Ontario Government: COVID-19 Public Health Measure and Restrictions.
- Ontario Government: COVID-19 Public Health Measures and Advice

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D S R Karis Consulting Inc.

ENGINEERING REIMAGINED

From: Dale J. Richardson, Director
DSR Karis Consulting Inc. AB Office
116 West Creek Meadow,
Chestermere, AB

March 6, 2023

To: Ottawa Police Service
474 Elgin St,
Ottawa ON K2P 2J6
613-236-1222

Re: Request for Complaints

Dear agent of the Ottawa Police Service,

DSR Karis Consulting Inc. ("DSR Karis"), a federal corporation extra provincially registered to operate in the province of Alberta and Saskatchewan is presenting to you this attached report "THE ENGINEERING OF BIOTERRORISM, CHILD TRAFFICKING, TREASON AND THE CRIME OF AGGRESSION UPDATE II (A PRELIMINARY REPORT AND ANALYSIS OF RISK)". This is an official request to report the forgoing crimes and any other crimes contained within the documentation. The director was unable to personally bring this complaint due to being tortured multiple times in Canada and the United States to hinder presenting this evidence.

A request for criminal negligence complaints against the minister of health Patty Hedju and any provincial, and municipal counterparts is requested. The Public Health Agency of Canada has issued criminally negligent engineering guidelines for Aerosol Generating Medical Procedures guidance that have introduced a critical weakness into the infrastructure of Canada that is an act preparatory to levying war and is prohibited by the criminal code.

The Medical professionals in the attached documentation has demonstrated that SARS-Cov-2 is the product of gain of function research and they must be consulted for further investigation. Request information from the following files for more information: Chestermere RCMP file# #2020-922562. Volusia County FL Sheriff file #23-1588 and 23-1430, 2022-1782862, 2023-1169539 forgery, 2023-147546, 2023-179141 human trafficking (RCMP Battleford), 2023-70016 Sexual Assault(RCMP Turner Valley, AB), 2023-111338 human trafficking (RCMP Turner Valley, AB), 23-1588 culpable negligence (covid related), 23-1430 Sexual Assault/human trafficking, 23-1430 Culpable negligence (Volusia County Sheriff, Florida), #223230811 Criminal Harassment/ Human Trafficking agency Assist (Austin Texas Police Department), Calgary Police Service File #22453817 and #22453637, RCMP file 20221414593, 2023-72400 (torture, Chestermere RCMP), 2023-59269, 2023-59284 (Criminal Negligence, Treason Chestermere RCMP), 2022-1715002 (RCMP Alberta), North Charleston Police Department #2022023800 Aggravated Domestic Assault with a Firearm, 2022023857 intimidation of a witness. This can be found from the department) and #23-0011116 Sexual Assault (Austin Police Department). San Antonio PD #22273597. RCMP HQ in Ottawa has been advised to oversee the torture investigations in North Battleford because the torture investigation has been referred to the jurisdiction that tortured the victims. Ottawa has also been advised to overlook criminal intimidation of a witness complaint (RCMP file # 2023-272542) arising from the criminal negligence and treason complaints arising out of the aforementioned research named in this documentation.

Dale J. Richardson
Director

Form 2
Initial Registered Office Address and First Board of Directors
Canada Business Corporations Act (CBCA) (s. 19 and 106)

Formulaire 2
Siège social initial et premier conseil d'administration
Loi canadienne sur les sociétés par actions (LCSA) (art. 19 et 106)

1 Corporate name
Dénomination sociale

DSR KARIS CONSULTING INC.

2 Address of registered office
Adresse du siège social

1292 95th street
North Battleford SK S9A 0G2

3 Additional address
Autre adresse

4 Members of the board of directors
Membres du conseil d'administration

		Resident Canadian / Résident Canadien
Dale James Richardson	1292 95th street, North Battleford SK S9A 0G2, Canada	Yes / Oui

5 Declaration: I certify that I have relevant knowledge and that I am authorized to sign this form.
Déclaration : J'atteste que je possède une connaissance suffisante et que je suis autorisé(e) à signer le présent formulaire.

Original signed by / Original signé par
Dale James Richardson

Dale James Richardson
3064414626

Misrepresentation constitutes an offence and, on summary conviction, a person is liable to a fine not exceeding $5000 or to imprisonment for a term not exceeding six months or both (subsection 250(1) of the CBCA).

Faire une fausse déclaration constitue une infraction et son auteur, sur déclaration de culpabilité par procédure sommaire, est passible d'une amende maximale de 5 000 $ et d'un emprisonnement maximal de six mois, ou l'une de ces peines (paragraphe 250(1) de la LCSA).

You are providing information required by the CBCA. Note that both the CBCA and the *Privacy Act* allow this information to be disclosed to the public. It will be stored in personal information bank number IC/PPU-049.

Vous fournissez des renseignements exigés par la LCSA. Il est à noter que la LCSA et la *Loi sur les renseignements personnels* permettent que de tels renseignements soient divulgués au public. Ils seront stockés dans la banque de renseignements personnels numéro IC/PPU-049.

I am the director of this federal corporation and I certify that these documents are true copies of the federal corporation

Dale James Richardson

Innovation, Science and Economic Development Canada
Corporations Canada

Innovation, Sciences et Développement économique Canada
Corporations Canada

Certificate of Incorporation

Canada Business Corporations Act

Certificat de constitution

Loi canadienne sur les sociétés par actions

DSR KARIS CONSULTING INC.

Corporate name / Dénomination sociale

1198650-3

Corporation number / Numéro de société

I HEREBY CERTIFY that the above-named corporation, the articles of incorporation of which are attached, is incorporated under the *Canada Business Corporations Act*.

JE CERTIFIE que la société susmentionnée, dont les statuts constitutifs sont joints, est constituée en vertu de la *Loi canadienne sur les sociétés par actions*.

R Edwards

Raymond Edwards

Director / Directeur

2020-04-01

Date of Incorporation (YYYY-MM-DD)
Date de constitution (AAAA-MM-JJ)

I am the director of this federal corporation and I certify that these documents are true copies of the federal corporation

Dale James Richardson

Canada

Innovation, Science and Economic Development Canada
Corporations Canada

Innovation, Sciences et Développement économique Canada
Corporations Canada

Form 1
Articles of Incorporation
Canada Business Corporations Act (s. 6)

Formulaire 1
Statuts constitutifs
Loi canadienne sur les sociétés par actions (art. 6)

1 Corporate name
Dénomination sociale

DSR KARIS CONSULTING INC.

2 The province or territory in Canada where the registered office is situated
La province ou le territoire au Canada où est situé le siège social

SK

3 The classes and any maximum number of shares that the corporation is authorized to issue
Catégories et le nombre maximal d'actions que la société est autorisée à émettre

See attached schedule / Voir l'annexe ci-jointe

4 Restrictions on share transfers
Restrictions sur le transfert des actions

See attached schedule / Voir l'annexe ci-jointe

5 Minimum and maximum number of directors
Nombre minimal et maximal d'administrateurs

Min. 1 Max. 1

6 Restrictions on the business the corporation may carry on
Limites imposées à l'activité commerciale de la société

None

7 Other Provisions
Autres dispositions

See attached schedule / Voir l'annexe ci-jointe

8 **Incorporator's Declaration:** I hereby certify that I am authorized to sign and submit this form.
Déclaration des fondateurs : J'atteste que je suis autorisé à signer et à soumettre le présent formulaire.

Name(s) - Nom(s)	Original Signed by - Original signé par
Dale James Richardson	Dale James Richardson Dale James Richardson

I am the director of this federal corporation and I certify that these documents are true copies of the federal corporation

Dale James Richardson

Misrepresentation constitutes an offence and, on summary conviction, a person is liable to a fine not exceeding $5000 or to imprisonment for a term not exceeding six months or both (subsection 250(1) of the CBCA).

Faire une fausse déclaration constitue une infraction et son auteur, sur déclaration de culpabilité par procédure sommaire, est passible d'une amende maximale de 5 000 $ et d'un emprisonnement maximal de six mois, ou l'une de ces peines (paragraphe 250(1) de la LCSA).

You are providing information required by the CBCA. Note that both the CBCA and the *Privacy Act* allow this information to be disclosed to the public. It will be stored in personal information bank number IC/PPU-049.

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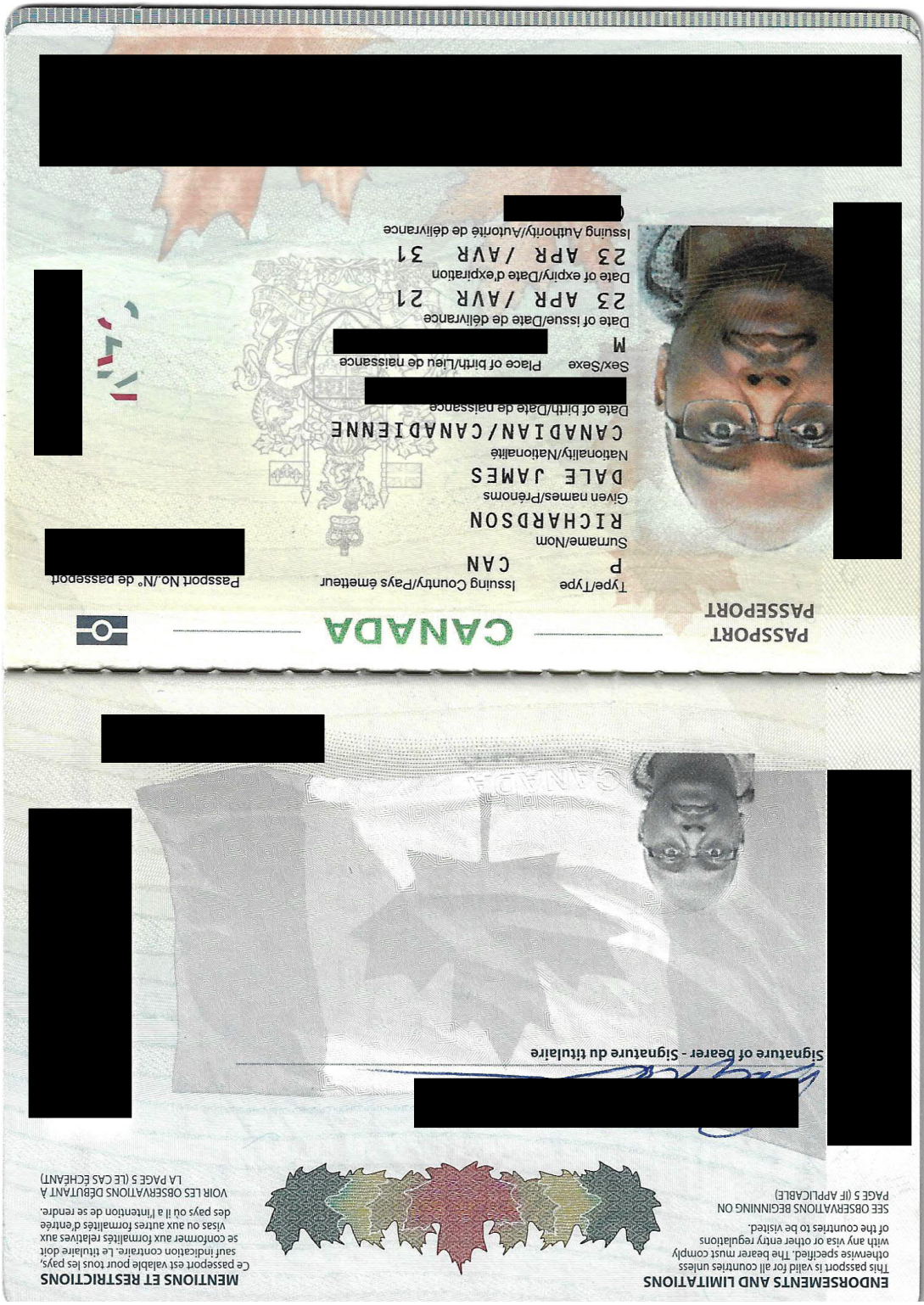
Canada

IC 3419 (2008/04)



ENDORSEMENTS AND LIMITATIONS

This passport is valid for all countries unless otherwise specified. The bearer must comply with any visa or other entry regulations of the countries to be visited.

SEE OBSERVATIONS BEGINNING ON PAGE 5 (IF APPLICABLE)

MENTIONS ET RESTRICTIONS

Ce passeport est valable pour tous les pays, sauf indication contraire. Le titulaire doit se conformer aux formalités relatives aux visas ou aux autres formalités d'entrée des pays où il a l'intention de se rendre.

VOIR LES OBSERVATIONS DÉBUTANT À LA PAGE 5 (LE CAS ÉCHÉANT)

[redacted]

[redacted]

Signature of bearer - Signature du titulaire

[redacted]

[redacted]

PASSPORT
PASSEPORT

CANADA

Type/Type: P

Issuing Country/Pays émetteur: CAN

Passport No./N° de passeport: [redacted]

Surname/Nom: RICHARDSON

Given names/Prénoms: DALE JAMES

Nationality/Nationalité: CANADIAN/CANADIENNE

Date of birth/Date de naissance: [redacted]

Sex/Sexe: M

Place of birth/Lieu de naissance: [redacted]

Date of issue/Date de délivrance: 23 APR /AVR 21

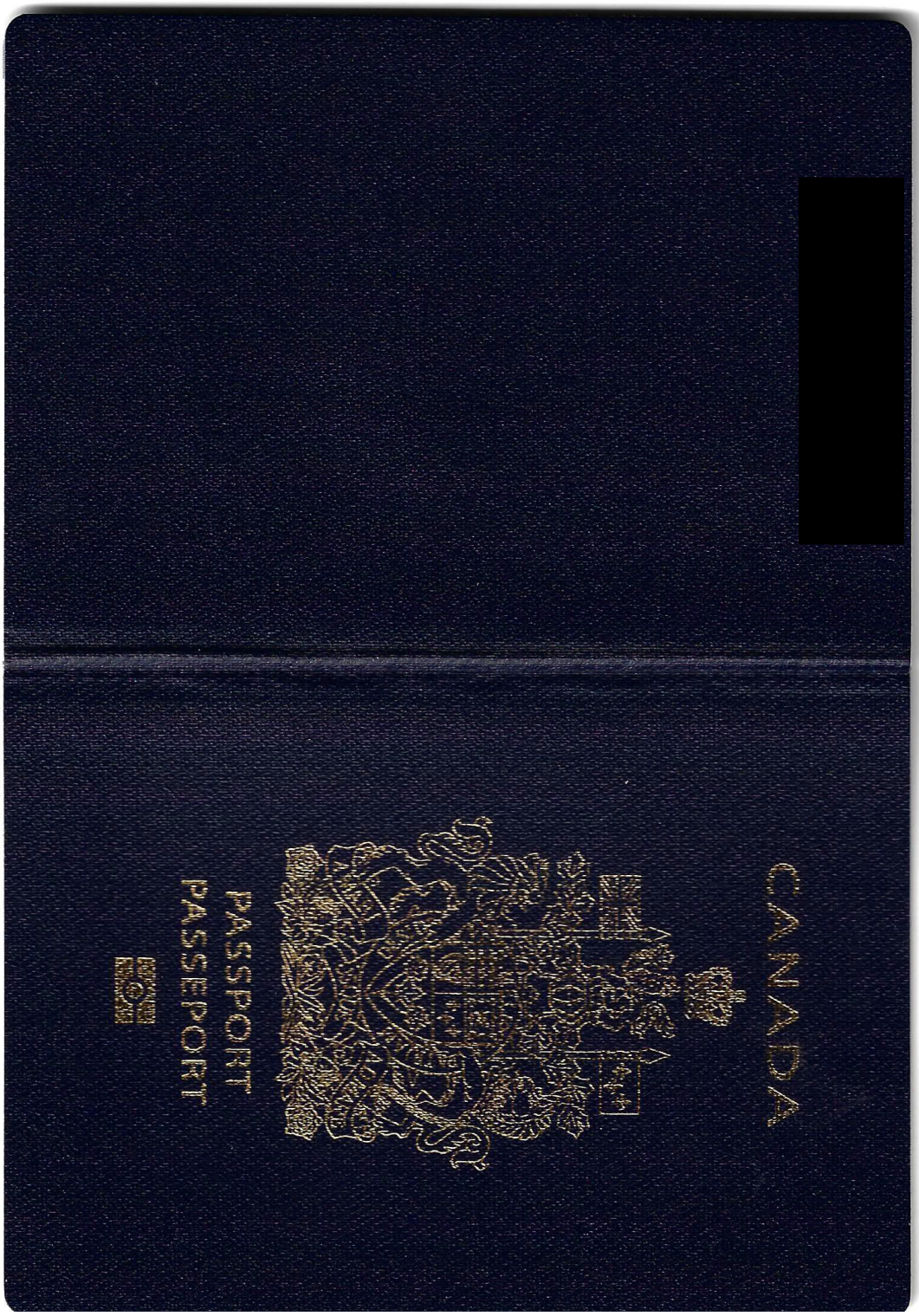
Date of expiry/Date d'expiration: 23 APR /AVR 31

Issuing Authority/Autorité de délivrance: [redacted]

[redacted]

[redacted]

[redacted]


CANADA
PASSPORT
PASSEPORT

CANADA
Saskatchewan
driver's licence
Customer Number
[redacted]
RICHARDSON
Dale James
[redacted]
North Battleford SK [redacted]
Date of Birth
[redacted]
Class
Date of Issue
[redacted]
End.
Date of Expiry
[redacted]
Rest.
Eyes
BROWN
Height
[redacted]
Sex
M


[redacted]
CLASS:
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and three axle RVs
RESTRICTIONS (Rest.):
A glasses/contact lenses
ENDORSEMENTS (End.):
A air brake
[redacted]
Validation Number
[redacted]
You [redacted] medical condition that
may affect the safe operation of a motor vehicle.
[redacted]
v2.0
driver's licence
www.sgi.sk.ca 1-844-TLK2SGI

Tracking number:

9508188076660394

Delivered
Shipping service: Xpresspost
Delivery standard: Mar. 9
Reason for delivery standard date change: Item was received by Canada Post after cut-off time.

Latest updates

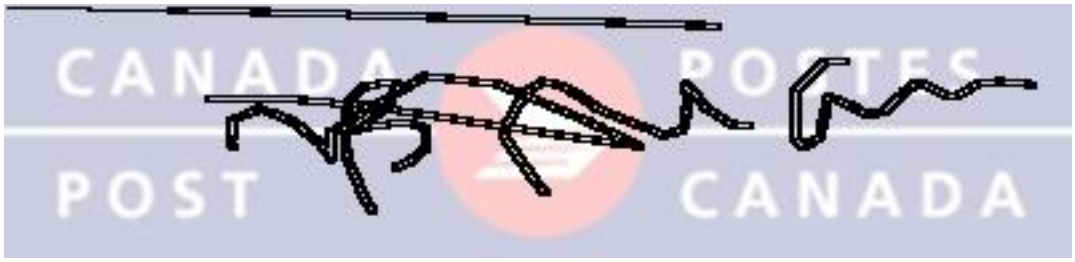
Date	Time	Location	Progress	Post office
Mar. 8	7:22 am		Signature available	
Mar. 8	7:22 am	OTTAWA, ON	Delivered to recipient's delivery partner	
Mar. 8	7:12 am	OTTAWA, ON	Out for delivery	
Mar. 6	6:46 pm	CALGARY, AB	Item processed	
Mar. 6	4:03 pm	CHESTERMERE, AB	Item accepted at the Post Office	
Mar. 6			Electronic information submitted by shipper	

Features and options
Signature Required

Date: 2023/03/08

Dear Sir or Madam

Please find below the scanned delivery date and signature of the recipient of the item identified below:

Item Number	9508188076660394
Product Name	Xpresspost
Reference Number 1	Not Applicable
Reference Number 2	Not Applicable
Delivery Date (yyyy/mm/dd)	2023-03-08
Signatory Name	9634 9634
Signature	

Yours sincerely,

Customer Relationship Network

1-888-550-6333.

(From outside Canada 1 416 979-3033)

This copy confirms to the delivery date and signature of the individual who accepted and signed for the item in question. This information has been extracted from the Canadapost data warehouse

DSR KARIS NORTH
CONSULTING INC.
ENGINEERING REIMAGINED

From: Dale J. Richardson, Director
DSR Karis North Consulting Inc.
8 The Green, Ste A
Dover, DE 19901

March 16, 2023

To: Barrie Police Service Headquarters
110 Fairview Road,
Barrie, ON L4N 8X8

And Ontario Provincial Police

Re: Authorization to start criminal complaints based on research

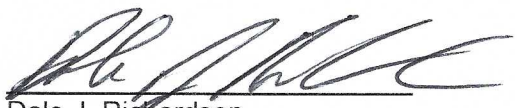
Dear Law Enforcement Agent,

DSR Karis North Consulting Inc., a Delaware Corporation has attached the report "THE ENGINEERING OF BIOTERRORISM, CHILD TRAFFICKING, TREASON AND THE CRIME OF AGGRESSION UPDATE II" to the Barrie Police Service Headquarters In Barrie, Ontario for the purposes of reporting the criminal activity contained therein or any other unlawful activity in Canada, the United States of America or any other location as needed. Permission is hereby granted for the aforementioned reasons and such actions necessary for reporting crimes.

Evidence will be pulled from the following files in the jurisdictions mentioned: Chestermere RCMP file# #2020-922562,. Volusia County FL Sheriff file #23-1588 and 23-1430, 2022-1782862, 2023-1169539 forgery, 2023-147546, 2023-179141 human trafficking (RCMP Battleford), 2023-70016 Sexual Assault(RCMP Turner Valley, AB), 2023-111338 human trafficking (RCMP Turner Valley, AB), 23-1588 culpable negligence (covid related), 23-1430 Sexual Assault/human trafficking, 23-1430 Culpable

negligence (Volusia County Sheriff, Florida), #223230811 Criminal Harassment/ Human Trafficking agency Assist (Austin Texas Police Department), Calgary Police Service File #22453817 and #22453637, RCMP file 20221414593, 2023-72400 (torture, Chestermere RCMP), 2023-59269, 2023-59284 (Criminal Negligence, Treason Chestermere RCMP), 2022-1715002 (RCMP Alberta), North Charleston Police Department #2022023800 Aggravated Domestic Assault with a Firearm, 2022023857 intimidation of a witness. This can be found from the department) and #23-0011116 Sexual Assault (Austin Police Department). San Antonio PD #22273597. RCMP HQ in Ottawa has been advised to oversee the torture investigations in North Battleford because the torture investigation has been referred to the jurisdiction that tortured the victims. Ottawa has also been advised to overlook criminal intimidation of a witness complaint (RCMP file # 2023-272542) arising from the criminal negligence and treason complaints arising out of the aforementioned research named in this documentation.

An agency assist file was requested in Canada to the RCMP to provide evidence to the FBI and Office of the Director of National Intelligence. The transmission requesting the agency assist is attached to this documentation. The list of US Complaints is attached to this letter.



Dale J. Richardson
Director
DSR Karis North Consulting Inc.

CANADA POST POSTES CANADA

Tracking number:

EX002052535CA

Delivered
Shipping service: Xpresspost USA
Delivery standard: Mar. 14

Latest updates

Date	Time	Location	Progress	Post office
Mar. 13	1:42 pm	84116,	Item successfully delivered	
Mar. 11	10:15 am	84116,	Item out for Delivery	
Mar. 11	10:04 am	84116,	Item has arrived at the delivery office in the destination country	
Mar. 11	10:34 am	84116,	Verifying recipient's address; Possible delay	
Mar. 10	7:56 am		Customs has released item to post office	
Mar. 9	5:32 pm	USLAXA,	International shipment has arrived in a foreign country	
Mar. 9	3:33 pm	USLAXA,	Item presented to customs	
Mar. 9	3:33 pm	USLAXA,	Item has arrived in foreign country	
Mar. 8	1:30 am	RICHMOND, BC	International item being forwarded to destination country	
Mar. 7	11:38 pm	RICHMOND, BC	Item processed	
Mar. 7	6:24 pm	RICHMOND, BC	Item arrived	
Mar. 6	6:51 pm	CALGARY, AB	Item processed	
Mar. 6	4:03 pm	CHESTERMERE, AB	Item accepted at the Post Office	
Mar. 6			Electronic information submitted by shipper	

Features and options
Signature Required

Date: 2023/03/13

Dear Sir or Madam

Please find below the scanned delivery date and signature of the recipient of the item identified below:

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Reference Number 1	Not Applicable
Reference Number 2	Not Applicable
Delivery Date (yyyy/mm/dd)	2023-03-13
Signatory Name	

Signature unavailable or not requested.

Signature

Yours sincerely,

Customer Relationship Network

1-888-550-6333.

(From outside Canada 1 416 979-3033)

This copy confirms to the delivery date and signature of the individual who accepted and signed for the item in question. This information has been extracted from the Canadapost data warehouse

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DSR KARIS NORTH
CONSULTING INC.
ENGINEERING REIMAGINED

From: Dale J. Richardson, Director
DSR Karis North Consulting Inc.
8 The Green, Ste A
Dover, DE 19901

March 6, 2023

To: Federal Bureau of Investigation
5425 West Amelia Earhart Drive
Salt Lake City, UT 84116
saltlakecity.fbi.gov
(801) 579-1400

Re: Authorization to start criminal complaints based on research

Dear Federal Agent,

DSR Karis North Consulting Inc., a Delaware Corporation has attached the report “THE ENGINEERING OF BIOTERRORISM, CHILD TRAFFICKING, TREASON AND THE CRIME OF AGGRESSION UPDATE II” to the Federal Bureau of Investigation Field Office In Salt Lake City Utah for the purposes of reporting the criminal activity contained therein or any other unlawful activity in the United States of America, Canada or any other location as needed. Permission is hereby granted for the aforementioned reasons and such actions necessary for reporting crimes outlined in Executive Order on Imposing Certain Sanctions in the Event of Foreign Interference in a United States Election issued September 12, 2018.

Evidence will be pulled from the following files in the jurisdictions mentioned: Chestermere RCMP file# #2020-922562,. Volusia County FL Sheriff file #23-1588 and 23-1430, 2022-1782862, 2023-1169539 forgery, 2023-147546, 2023-179141 human trafficking (RCMP Battleford), 2023-70016 Sexual

Assault(RCMP Turner Valley, AB), 2023-111338 human trafficking (RCMP Turner Valley, AB), 23-1588 culpable negligence (covid related), 23-1430 Sexual Assault/human trafficking, 23-1430 Culpable negligence (Volusia County Sheriff, Florida), #223230811 Criminal Harassment/ Human Trafficking agency Assist (Austin Texas Police Department), Calgary Police Service File #22453817 and #22453637, RCMP file 20221414593, 2023-72400 (torture, Chestermere RCMP), 2023-59269, 2023-59284 (Criminal Negligence, Treason Chestermere RCMP), 2022-1715002 (RCMP Alberta), North Charleston Police Department #2022023800 Aggravated Domestic Assault with a Firearm, 2022023857 intimidation of a witness. This can be found from the department) and #23-0011116 Sexual Assault (Austin Police Department). San Antonio PD #22273597. RCMP HQ in Ottawa has been advised to oversee the torture investigations in North Battleford because the torture investigation has been referred to the jurisdiction that tortured the victims. Ottawa has also been advised to overlook criminal intimidation of a witness complaint (RCMP file # 2023-272542) arising from the criminal negligence and treason complaints arising out of the aforementioned research named in this documentation.

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Dale J. Richardson
Director
DSR Karis North Consulting Inc.

Table of Contents

1. 18 U.S. Code § 371 - Conspiracy to commit offense or to defraud United States

   If two or more persons conspire either to commit any offense against the United States, or to defraud the United States, or any agency thereof in any manner or for any purpose, and one or more of such persons do any act to effect the object of the conspiracy, each shall be fined under this title or imprisoned not more than five years, or both.

   If, however, the offense, the commission of which is the object of the conspiracy, is a misdemeanor only, the punishment for such conspiracy shall not exceed the maximum punishment provided for such misdemeanor.

2. 18 U.S. Code § 373 - Solicitation to commit a crime of violence

   (a)Whoever, with intent that another person engage in conduct constituting a felony that has as an element the use, attempted use, or threatened use of physical force against property or against the person of another in violation of the laws of the United States, and under circumstances strongly corroborative of that intent, solicits, commands, induces, or otherwise endeavors to persuade such other person to engage in such conduct, shall be imprisoned not more than one-half the maximum term of imprisonment or (notwithstanding section 3571) fined not more than one-half of the maximum fine prescribed for the punishment of the crime solicited, or both; or if the crime solicited is punishable by life imprisonment or death, shall be imprisoned for not more than twenty years.
   (b)It is an affirmative defense to a prosecution under this section that, under circumstances manifesting a voluntary and complete renunciation of his criminal intent, the defendant prevented the commission of the crime solicited. A renunciation is not “voluntary and complete” if it is motivated in whole or in part by a decision to postpone the commission of the crime until another time or to substitute another victim or another but similar objective. If the defendant raises the affirmative defense at trial, the defendant has the burden of proving the defense by a preponderance of the evidence.
   (c)It is not a defense to a prosecution under this section that the person solicited could not be convicted of the crime because he lacked the state of mind required for its commission, because he was incompetent or irresponsible, or because he is immune from prosecution or is not subject to prosecution.

3. 18 U.S. Code § 1201 - Kidnapping

(a)Whoever unlawfully seizes, confines, inveigles, decoys, kidnaps, abducts, or carries away and holds for ransom or reward or otherwise any person, except in the case of a minor by the parent thereof, when—

(1)the person is willfully transported in interstate or foreign commerce, regardless of whether the person was alive when transported across a State boundary, or the offender travels in interstate or foreign commerce or uses the mail or any means, facility, or instrumentality of interstate or foreign commerce in committing or in furtherance of the commission of the offense;

(2)any such act against the person is done within the special maritime and territorial jurisdiction of the United States;

(3)any such act against the person is done within the special aircraft jurisdiction of the United States as defined in section 46501 of title 49;

(4)the person is a foreign official, an internationally protected person, or an official guest as those terms are defined in section 1116(b) of this title; or

(5)the person is among those officers and employees described in section 1114 of this title and any such act against the person is done while the person is engaged in, or on account of, the performance of official duties,

shall be punished by imprisonment for any term of years or for life and, if the death of any person results, shall be punished by death or life imprisonment.

(b)With respect to subsection (a)(1), above, the failure to release the victim within twenty-four hours after he shall have been unlawfully seized, confined, inveigled, decoyed, kidnapped, abducted, or carried away shall create a rebuttable presumption that such person has been transported in interstate or foreign commerce. Notwithstanding the preceding sentence, the fact that the presumption under this section has not yet taken effect does not preclude a Federal investigation of a possible violation of this section before the 24-hour period has ended.

(c)If two or more persons conspire to violate this section and one or more of such persons do any overt act to effect the object of the conspiracy, each shall be punished by imprisonment for any term of years or for life.

(d)Whoever attempts to violate subsection (a) shall be punished by imprisonment for not more than twenty years.

(e)If the victim of an offense under subsection (a) is an internationally protected person outside the United States, the United States may exercise jurisdiction over the offense if (1) the victim is a representative, officer, employee, or agent of the United States, (2) an offender is a national of the United States, or (3) an offender is afterwards found in the United States. As used in this subsection, the United States includes all areas under the jurisdiction of the United States including any of the places within the provisions of sections 5 and 7 of this title and section 46501(2) of title 49. For purposes of this subsection, the term “national of the United States” has

the meaning prescribed in section 101(a)(22) of the Immigration and Nationality Act (8 U.S.C. 1101(a)(22)).
(f)In the course of enforcement of subsection (a)(4) and any other sections prohibiting a conspiracy or attempt to violate subsection (a)(4), the Attorney General may request assistance from any Federal, State, or local agency, including the Army, Navy, and Air Force, any statute, rule, or regulation to the contrary notwithstanding.
(g)Special Rule for Certain Offenses Involving Children.—
(1)To whom applicable.—If—
(A)the victim of an offense under this section has not attained the age of eighteen years; and
(B)the offender—
(i)has attained such age; and
(ii)is not—
(I)a parent;
(II)a grandparent;
(III)a brother;
(IV)a sister;
(V)an aunt;
(VI)an uncle; or
(VII)an individual having legal custody of the victim;
the sentence under this section for such offense shall include imprisonment for not less than 20 years.
[(2)Repealed. Pub. L. 108–21, title I, § 104(b), Apr. 30, 2003, 117 Stat. 653.]
(h)As used in this section, the term “parent” does not include a person whose parental rights with respect to the victim of an offense under this section have been terminated by a final court order.

4. 18 U.S. Code § 1203 - Hostage taking

(a)Except as provided in subsection (b) of this section, whoever, whether inside or outside the United States, seizes or detains and threatens to kill, to injure, or to continue to detain another person in order to compel a third person or a governmental organization to do or abstain from doing any act as an explicit or implicit condition for the release of the person detained, or attempts or conspires to do so, shall be punished by imprisonment for any term of years or for life and, if the death of any person results, shall be punished by death or life imprisonment.
(b)
(1)It is not an offense under this section if the conduct required for the offense occurred outside the United States unless—
(A)the offender or the person seized or detained is a national of the United States;
(B)the offender is found in the United States; or
(C)the governmental organization sought to be compelled is the Government of the United States.

(2)It is not an offense under this section if the conduct required for the offense occurred inside the United States, each alleged offender and each person seized or detained are nationals of the United States, and each alleged offender is found in the United States, unless the governmental organization sought to be compelled is the Government of the United States.

(c)As used in this section, the term “national of the United States” has the meaning given such term in section 101(a)(22) of the Immigration and Nationality Act (8 U.S.C. 1101(a)(22)).

5. Terrorism Definition 18 U.S.C. § 2331

(5)the term “domestic terrorism” means activities that—

(A)involve acts dangerous to human life that are a violation of the criminal laws of the United States or of any State;

(B)appear to be intended—

(i)to intimidate or coerce a civilian population;

(ii)to influence the policy of a government by intimidation or coercion; or

(iii)to affect the conduct of a government by mass destruction, assassination, or kidnapping; and

(C)occur primarily within the territorial jurisdiction of the United States; and

5.1. 18 U.S. Code § 2332 - Criminal penalties

(a)Homicide.—Whoever kills a national of the United States, while such national is outside the United States, shall—

(1)if the killing is murder (as defined in section 1111(a)), be fined under this title, punished by death or imprisonment for any term of years or for life, or both;

(2)if the killing is a voluntary manslaughter as defined in section 1112(a) of this title, be fined under this title or imprisoned not more than ten years, or both; and

(3)if the killing is an involuntary manslaughter as defined in section 1112(a) of this title, be fined under this title or imprisoned not more than three years, or both.

(b)Attempt or Conspiracy With Respect to Homicide.—Whoever outside the United States attempts to kill, or engages in a conspiracy to kill, a national of the United States shall—

(1)in the case of an attempt to commit a killing that is a murder as defined in this chapter, be fined under this title or imprisoned not more than 20 years, or both; and

(2)in the case of a conspiracy by two or more persons to commit a killing that is a murder as defined in section 1111(a) of this title, if one or more of such persons do any overt act to effect the object of the conspiracy, be fined under this title or imprisoned for any term of years or for life, or both so fined and so imprisoned.

(c)Other Conduct.—Whoever outside the United States engages in physical violence—
(1)with intent to cause serious bodily injury to a national of the United States; or
(2)with the result that serious bodily injury is caused to a national of the United States;
shall be fined under this title or imprisoned not more than ten years, or both.
(d)Limitation on Prosecution.—
No prosecution for any offense described in this section shall be undertaken by the United States except on written certification of the Attorney General or the highest ranking subordinate of the Attorney General with responsibility for criminal prosecutions that, in the judgment of the certifying official, such offense was intended to coerce, intimidate, or retaliate against a government or a civilian population.

6. 18 U.S. Code § 175 - Prohibitions with respect to biological weapons

(a)In General.—
Whoever knowingly develops, produces, stockpiles, transfers, acquires, retains, or possesses any biological agent, toxin, or delivery system for use as a weapon, or knowingly assists a foreign state or any organization to do so, or attempts, threatens, or conspires to do the same, shall be fined under this title or imprisoned for life or any term of years, or both. There is extraterritorial Federal jurisdiction over an offense under this section committed by or against a national of the United States.
(b)Additional Offense.—
Whoever knowingly possesses any biological agent, toxin, or delivery system of a type or in a quantity that, under the circumstances, is not reasonably justified by a prophylactic, protective, bona fide research, or other peaceful purpose, shall be fined under this title, imprisoned not more than 10 years, or both. In this subsection, the terms “biological agent” and “toxin” do not encompass any biological agent or toxin that is in its naturally occurring environment, if the biological agent or toxin has not been cultivated, collected, or otherwise extracted from its natural source.
(c)Definition.—
For purposes of this section, the term “for use as a weapon” includes the development, production, transfer, acquisition, retention, or possession of any biological agent, toxin, or delivery system for other than prophylactic, protective, bona fide research, or other peaceful purposes.

6.1. 18 U.S. Code § 175a - Requests for military assistance to enforce prohibition in certain emergencies

The Attorney General may request the Secretary of Defense to provide assistance under section 382 of title 10 [1] in support of Department of Justice activities relating to the enforcement of section 175 of this title in an emergency situation involving a biological weapon of mass destruction. The authority to make such a request may be exercised by another official of the Department of Justice in accordance with section 382(f)(2) of title 10.[1]

6.1.1. Subtopic

6.2. 18 U.S. Code § 175c - Variola virus

(a)Unlawful Conduct.—
(1)In general.—
Except as provided in paragraph (2), it shall be unlawful for any person to knowingly produce, engineer, synthesize, acquire, transfer directly or indirectly, receive, possess, import, export, or use, or possess and threaten to use, variola virus.
(2)Exception.—
This subsection does not apply to conduct by, or under the authority of, the Secretary of Health and Human Services.
(b)Jurisdiction.—Conduct prohibited by subsection (a) is within the jurisdiction of the United States if—
(1)the offense occurs in or affects interstate or foreign commerce;
(2)the offense occurs outside of the United States and is committed by a national of the United States;
(3)the offense is committed against a national of the United States while the national is outside the United States;
(4)the offense is committed against any property that is owned, leased, or used by the United States or by any department or agency of the United States, whether the property is within or outside the United States; or
(5)an offender aids or abets any person over whom jurisdiction exists under this subsection in committing an offense under this section or conspires with any person over whom jurisdiction exists under this subsection to commit an offense under this section.
(c)Criminal Penalties.—
(1)In general.—
Any person who violates, or attempts or conspires to violate, subsection (a) shall be fined not more than $2,000,000 and shall be sentenced to a term of imprisonment not less than 25 years or to imprisonment for life.
(2)Other circumstances.—
Any person who, in the course of a violation of subsection (a), uses, attempts or conspires to use, or possesses and threatens to use, any item or items

described in subsection (a), shall be fined not more than $2,000,000 and imprisoned for not less than 30 years or imprisoned for life.

(3)Special circumstances.—

If the death of another results from a person's violation of subsection (a), the person shall be fined not more than $2,000,000 and punished by imprisonment for life.

(d)Definition.—

As used in this section, the term "variola virus" means a virus that can cause human smallpox or any derivative of the variola major virus that contains more than 85 percent of the gene sequence of the variola major virus or the variola minor virus.

6.3. 18 U.S. Code § 176 - Seizure, forfeiture, and destruction

(a)In General.—

(1)Except as provided in paragraph (2), the Attorney General may request the issuance, in the same manner as provided for a search warrant, of a warrant authorizing the seizure of any biological agent, toxin, or delivery system that—

(A)pertains to conduct prohibited under section 175 of this title; or

(B)is of a type or in a quantity that under the circumstances has no apparent justification for prophylactic, protective, or other peaceful purposes.

(2)In exigent circumstances, seizure and destruction of any biological agent, toxin, or delivery system described in subparagraphs (A) and (B) of paragraph (1) may be made upon probable cause without the necessity for a warrant.

(b)Procedure.—

Property seized pursuant to subsection (a) shall be forfeited to the United States after notice to potential claimants and an opportunity for a hearing. At such hearing, the Government shall bear the burden of persuasion by a preponderance of the evidence. Except as inconsistent herewith, the same procedures and provisions of law relating to a forfeiture under the customs laws shall extend to a seizure or forfeiture under this section. The Attorney General may provide for the destruction or other appropriate disposition of any biological agent, toxin, or delivery system seized and forfeited pursuant to this section.

(c)Affirmative Defense.—It is an affirmative defense against a forfeiture under subsection (a)(1)(B) of this section that—

(1)such biological agent, toxin, or delivery system is for a prophylactic, protective, or other peaceful purpose; and

(2)such biological agent, toxin, or delivery system, is of a type and quantity reasonable for that purpose.

6.4. 18 U.S. Code § 177 - Injunctions

(a)In General.—The United States may obtain in a civil action an injunction against—

(1)the conduct prohibited under section 175 of this title;
(2)the preparation, solicitation, attempt, threat, or conspiracy to engage in conduct prohibited under section 175 of this title; or
(3)the development, production, stockpiling, transferring, acquisition, retention, or possession, or the attempted development, production, stockpiling, transferring, acquisition, retention, or possession of any biological agent, toxin, or delivery system of a type or in a quantity that under the circumstances has no apparent justification for prophylactic, protective, or other peaceful purposes.

(b)Affirmative Defense.—It is an affirmative defense against an injunction under subsection (a)(3) of this section that—

(1)the conduct sought to be enjoined is for a prophylactic, protective, or other peaceful purpose; and
(2)such biological agent, toxin, or delivery system is of a type and quantity reasonable for that purpose.

7. Manslaughter 18 U.S.C. § 1112

18 U.S. Code § 1112 - Manslaughter
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(a)Manslaughter is the unlawful killing of a human being without malice. It is of two kinds:
Voluntary—Upon a sudden quarrel or heat of passion.

Involuntary—In the commission of an unlawful act not amounting to a felony, or in the commission in an unlawful manner, or without due caution and circumspection, of a lawful act which might produce death.

8. 18 U.S. Code § 1113 - Attempt to commit murder or manslaughter

Except as provided in section 113 of this title, whoever, within the special maritime and territorial jurisdiction of the United States, attempts to commit murder or manslaughter, shall, for an attempt to commit murder be imprisoned not more than twenty years or fined under this title, or both, and for an attempt to commit manslaughter be imprisoned not more than seven years or fined under this title, or both.

9. 18 U.S. Code § 1117 - Conspiracy to murder

If two or more persons conspire to violate section 1111, 1114, 1116, or 1119 of this title, and one or more of such persons do any overt act to effect the object of the conspiracy, each shall be punished by imprisonment for any term of years or for life.

10. 18 U.S. Code § 1510 - Obstruction of criminal investigations

(a)Whoever willfully endeavors by means of bribery to obstruct, delay, or prevent the communication of information relating to a violation of any criminal statute of the United States by any person to a criminal investigator shall be fined under this title, or imprisoned not more than five years, or both.
(b)
(1)Whoever, being an officer of a financial institution, with the intent to obstruct a judicial proceeding, directly or indirectly notifies any other person about the existence or contents of a subpoena for records of that financial institution, or information that has been furnished in response to that subpoena, shall be fined under this title or imprisoned not more than 5 years, or both.

11. 18 U.S. Code § 1512 - Tampering with a witness, victim, or an informant

(a)
(1)Whoever kills or attempts to kill another person, with intent to—
(A)prevent the attendance or testimony of any person in an official proceeding;
(B)prevent the production of a record, document, or other object, in an official proceeding; or
(C)prevent the communication by any person to a law enforcement officer or judge of the United States of information relating to the commission or possible commission of a Federal offense or a violation of conditions of probation, parole, or release pending judicial proceedings;
shall be punished as provided in paragraph (3).
(2)Whoever uses physical force or the threat of physical force against any person, or attempts to do so, with intent to—
(A)influence, delay, or prevent the testimony of any person in an official proceeding;
(B)cause or induce any person to—
(i)withhold testimony, or withhold a record, document, or other object, from an official proceeding;
(ii)alter, destroy, mutilate, or conceal an object with intent to impair the integrity or availability of the object for use in an official proceeding;
(iii)evade legal process summoning that person to appear as a witness, or to produce a record, document, or other object, in an official proceeding; or

(iv)be absent from an official proceeding to which that person has been summoned by legal process; or

(C)hinder, delay, or prevent the communication to a law enforcement officer or judge of the United States of information relating to the commission or possible commission of a Federal offense or a violation of conditions of probation, supervised release, parole, or release pending judicial proceedings;

shall be punished as provided in paragraph (3).

(3)The punishment for an offense under this subsection is—

(A)in the case of a killing, the punishment provided in sections 1111 and 1112;

(B)in the case of—

(i)an attempt to murder; or

(ii)the use or attempted use of physical force against any person;

imprisonment for not more than 30 years; and

(C)in the case of the threat of use of physical force against any person, imprisonment for not more than 20 years.

(b)Whoever knowingly uses intimidation, threatens, or corruptly persuades another person, or attempts to do so, or engages in misleading conduct toward another person, with intent to—

(1)influence, delay, or prevent the testimony of any person in an official proceeding;

(2)cause or induce any person to—

(A)withhold testimony, or withhold a record, document, or other object, from an official proceeding;

(B)alter, destroy, mutilate, or conceal an object with intent to impair the object's integrity or availability for use in an official proceeding;

(C)evade legal process summoning that person to appear as a witness, or to produce a record, document, or other object, in an official proceeding; or

(D)be absent from an official proceeding to which such person has been summoned by legal process; or

(3)hinder, delay, or prevent the communication to a law enforcement officer or judge of the United States of information relating to the commission or possible commission of a Federal offense or a violation of conditions of probation [1] supervised release,,[1] parole, or release pending judicial proceedings;

shall be fined under this title or imprisoned not more than 20 years, or both.

(c)Whoever corruptly—

(1)alters, destroys, mutilates, or conceals a record, document, or other object, or attempts to do so, with the intent to impair the object's integrity or availability for use in an official proceeding; or

(2)otherwise obstructs, influences, or impedes any official proceeding, or attempts to do so,

shall be fined under this title or imprisoned not more than 20 years, or both.

(d)Whoever intentionally harasses another person and thereby hinders, delays, prevents, or dissuades any person from—

(1)attending or testifying in an official proceeding;

(2)reporting to a law enforcement officer or judge of the United States the commission or possible commission of a Federal offense or a violation of conditions of probation 1 supervised release,,1 parole, or release pending judicial proceedings;

(3)arresting or seeking the arrest of another person in connection with a Federal offense; or

(4)causing a criminal prosecution, or a parole or probation revocation proceeding, to be sought or instituted, or assisting in such prosecution or proceeding;

or attempts to do so, shall be fined under this title or imprisoned not more than 3 years, or both.

(e)In a prosecution for an offense under this section, it is an affirmative defense, as to which the defendant has the burden of proof by a preponderance of the evidence, that the conduct consisted solely of lawful conduct and that the defendant's sole intention was to encourage, induce, or cause the other person to testify truthfully.

(f)For the purposes of this section—

(1)an official proceeding need not be pending or about to be instituted at the time of the offense; and

(2)the testimony, or the record, document, or other object need not be admissible in evidence or free of a claim of privilege.

(g)In a prosecution for an offense under this section, no state of mind need be proved with respect to the circumstance—

(1)that the official proceeding before a judge, court, magistrate judge, grand jury, or government agency is before a judge or court of the United States, a United States magistrate judge, a bankruptcy judge, a Federal grand jury, or a Federal Government agency; or

(2)that the judge is a judge of the United States or that the law enforcement officer is an officer or employee of the Federal Government or a person authorized to act for or on behalf of the Federal Government or serving the Federal Government as an adviser or consultant.

(h)There is extraterritorial Federal jurisdiction over an offense under this section.

(i)A prosecution under this section or section 1503 may be brought in the district in which the official proceeding (whether or not pending or about to be instituted) was

intended to be affected or in the district in which the conduct constituting the alleged offense occurred.
(j)If the offense under this section occurs in connection with a trial of a criminal case, the maximum term of imprisonment which may be imposed for the offense shall be the higher of that otherwise provided by law or the maximum term that could have been imposed for any offense charged in such case.
(k)Whoever conspires to commit any offense under this section shall be subject to the same penalties as those prescribed for the offense the commission of which was the object of the conspiracy.

12. 18 U.S. Code § 1513 - Retaliating against a witness, victim, or an informant

(a)
(1)Whoever kills or attempts to kill another person with intent to retaliate against any person for—
(A)the attendance of a witness or party at an official proceeding, or any testimony given or any record, document, or other object produced by a witness in an official proceeding; or
(B)providing to a law enforcement officer any information relating to the commission or possible commission of a Federal offense or a violation of conditions of probation, supervised release, parole, or release pending judicial proceedings,
shall be punished as provided in paragraph (2).
(2)The punishment for an offense under this subsection is—
(A)in the case of a killing, the punishment provided in sections 1111 and 1112; and
(B)in the case of an attempt, imprisonment for not more than 30 years.
(b)Whoever knowingly engages in any conduct and thereby causes bodily injury to another person or damages the tangible property of another person, or threatens to do so, with intent to retaliate against any person for—
(1)the attendance of a witness or party at an official proceeding, or any testimony given or any record, document, or other object produced by a witness in an official proceeding; or
(2)any information relating to the commission or possible commission of a Federal offense or a violation of conditions of probation, supervised release, parole, or release pending judicial proceedings given by a person to a law enforcement officer;
or attempts to do so, shall be fined under this title or imprisoned not more than 20 years, or both.
(c)If the retaliation occurred because of attendance at or testimony in a criminal case, the maximum term of imprisonment which may be imposed for the offense

under this section shall be the higher of that otherwise provided by law or the maximum term that could have been imposed for any offense charged in such case.
(d)There is extraterritorial Federal jurisdiction over an offense under this section.
(e)Whoever knowingly, with the intent to retaliate, takes any action harmful to any person, including interference with the lawful employment or livelihood of any person, for providing to a law enforcement officer any truthful information relating to the commission or possible commission of any Federal offense, shall be fined under this title or imprisoned not more than 10 years, or both.
(f)Whoever conspires to commit any offense under this section shall be subject to the same penalties as those prescribed for the offense the commission of which was the object of the conspiracy.
(g)A prosecution under this section may be brought in the district in which the official proceeding (whether pending, about to be instituted, or completed) was intended to be affected, or in which the conduct constituting the alleged offense occurred.

13. 18 U.S. Code § 1519 - Destruction, alteration, or falsification of records in Federal investigations and bankruptcy

    Whoever knowingly alters, destroys, mutilates, conceals, covers up, falsifies, or makes a false entry in any record, document, or tangible object with the intent to impede, obstruct, or influence the investigation or proper administration of any matter within the jurisdiction of any department or agency of the United States or any case filed under title 11, or in relation to or contemplation of any such matter or case, shall be fined under this title, imprisoned not more than 20 years, or both.

14. 18 U.S. Code § 1581 - Peonage; obstructing enforcement

    (a)Whoever holds or returns any person to a condition of peonage, or arrests any person with the intent of placing him in or returning him to a condition of peonage, shall be fined under this title or imprisoned not more than 20 years, or both. If death results from the violation of this section, or if the violation includes kidnapping or an attempt to kidnap, aggravated sexual abuse or the attempt to commit aggravated sexual abuse, or an attempt to kill, the defendant shall be fined under this title or imprisoned for any term of years or life, or both.
    (b)Whoever obstructs, or attempts to obstruct, or in any way interferes with or prevents the enforcement of this section, shall be liable to the penalties prescribed in subsection (a).

15. 18 U.S. Code § 1590 - Trafficking with respect to peonage, slavery, involuntary servitude, or forced labor

    (a)Whoever knowingly recruits, harbors, transports, provides, or obtains by any means, any person for labor or services in violation of this chapter shall be fined under this title or imprisoned not more than 20 years, or both. If death results from the violation of this section, or if the violation includes kidnapping or an attempt to

kidnap, aggravated sexual abuse, or the attempt to commit aggravated sexual abuse, or an attempt to kill, the defendant shall be fined under this title or imprisoned for any term of years or life, or both.
(b)Whoever obstructs, attempts to obstruct, or in any way interferes with or prevents the enforcement of this section, shall be subject to the penalties under subsection (a).

16. 18 U.S. Code § 1592 - Unlawful conduct with respect to documents in furtherance of trafficking, peonage, slavery, involuntary servitude, or forced labor

(a)Whoever knowingly destroys, conceals, removes, confiscates, or possesses any actual or purported passport or other immigration document, or any other actual or purported government identification document, of another person—
(1)in the course of a violation of section 1581, 1583, 1584, 1589, 1590, 1591, or 1594(a);
(2)with intent to violate section 1581, 1583, 1584, 1589, 1590, or 1591; or
(3)to prevent or restrict or to attempt to prevent or restrict, without lawful authority, the person's liberty to move or travel, in order to maintain the labor or services of that person, when the person is or has been a victim of a severe form of trafficking in persons, as defined in section 103 of the Trafficking Victims Protection Act of 2000,
shall be fined under this title or imprisoned for not more than 5 years, or both.
(b)Subsection (a) does not apply to the conduct of a person who is or has been a victim of a severe form of trafficking in persons, as defined in section 103 of the Trafficking Victims Protection Act of 2000, if that conduct is caused by, or incident to, that trafficking.
(c)Whoever obstructs, attempts to obstruct, or in any way interferes with or prevents the enforcement of this section, shall be subject to the penalties described in subsection (a).

17. 18 U.S. Code § 1593 - Mandatory restitution

(a)Notwithstanding section 3663 or 3663A, and in addition to any other civil or criminal penalties authorized by law, the court shall order restitution for any offense under this chapter.
(b)
(1)The order of restitution under this section shall direct the defendant to pay the victim (through the appropriate court mechanism) the full amount of the victim's losses, as determined by the court under paragraph (3) of this subsection.
(2)An order of restitution under this section shall be issued and enforced in accordance with section 3664 in the same manner as an order under section 3663A.
(3)As used in this subsection, the term "full amount of the victim's losses" has the same meaning as provided in section 2259(c)(2) and

shall in addition include the greater of the gross income or value to the defendant of the victim's services or labor or the value of the victim's labor as guaranteed under the minimum wage and overtime guarantees of the Fair Labor Standards Act (29 U.S.C. 201 et seq.).

(4)The forfeiture of property under this subsection shall be governed by the provisions of section 413 (other than subsection (d) of such section) of the Controlled Substances Act (21 U.S.C. 853).

(c)As used in this section, the term "victim" means the individual harmed as a result of a crime under this chapter, including, in the case of a victim who is under 18 years of age, incompetent, incapacitated, or deceased, the legal guardian of the victim or a representative of the victim's estate, or another family member, or any other person appointed as suitable by the court, but in no event shall the defendant be named such representative or guardian.

18. 18 U.S. Code § 1593A - Benefitting financially from peonage, slavery, and trafficking in persons

Whoever knowingly benefits, financially or by receiving anything of value, from participation in a venture which has engaged in any act in violation of this chapter, knowing or in reckless disregard of the fact that the venture has engaged in such violation, shall be fined under this title or imprisoned in the same manner as a completed violation of such section.

19. 18 U.S. Code § 1596 - Additional jurisdiction in certain trafficking offenses

(a)In General.—In addition to any domestic or extra-territorial jurisdiction otherwise provided by law, the courts of the United States have extra-territorial jurisdiction over any offense (or any attempt or conspiracy to commit an offense) under section 1581, 1583, 1584, 1589, 1590, or 1591 if—

(1)an alleged offender is a national of the United States or an alien lawfully admitted for permanent residence (as those terms are defined in section 101 of the Immigration and Nationality Act (8 U.S.C. 1101)); or

(2)an alleged offender is present in the United States, irrespective of the nationality of the alleged offender.

(b)Limitation on Prosecutions of Offenses Prosecuted in Other Countries.—
No prosecution may be commenced against a person under this section if a foreign government, in accordance with jurisdiction recognized by the United States, has prosecuted or is prosecuting such person for the conduct constituting such offense, except upon the approval of the Attorney General or the Deputy Attorney General (or a person acting in either such capacity), which function of approval may not be delegated.

20. 18 U.S. Code § 1597 - Unlawful conduct with respect to immigration documents

(a)Destruction, Concealment, Removal, Confiscation, or Possession of Immigration Documents.—It shall be unlawful for any person to knowingly destroy, conceal,

remove, confiscate, or possess, an actual or purported passport or other immigration document of another individual—

(1)in the course of violating section 1351 of this title or section 274 of the Immigration and Nationality Act (8 U.S.C. 1324);

(2)with intent to violate section 1351 of this title or section 274 of the Immigration and Nationality Act (8 U.S.C. 1324); or

(3)in order to, without lawful authority, maintain, prevent, or restrict the labor of services of the individual.

(b)Penalty.—

Any person who violates subsection (a) shall be fined under this title, imprisoned for not more than 1 year, or both.

(c)Obstruction.—

Any person who knowingly obstructs, attempts to obstruct, or in any way interferes with or prevents the enforcement of this section, shall be subject to the penalties described in subsection (b).

21. 18 U.S. Code § 2151 - Definitions

As used in this chapter:

The words “war material” include arms, armament, ammunition, livestock, forage, forest products and standing timber, stores of clothing, air, water, food, foodstuffs, fuel, supplies, munitions, and all articles, parts or ingredients, intended for, adapted to, or suitable for the use of the United States or any associate nation, in connection with the conduct of war or defense activities.

The words “war premises” include all buildings, grounds, mines, or other places wherein such war material is being produced, manufactured, repaired, stored, mined, extracted, distributed, loaded, unloaded, or transported, together with all machinery and appliances therein contained; and all forts, arsenals, navy yards, camps, prisons, or other installations of the Armed Forces of the United States, or any associate nation.

The words “war utilities” include all railroads, railways, electric lines, roads of whatever description, any railroad or railway fixture, canal, lock, dam, wharf, pier, dock, bridge, building, structure, engine, machine, mechanical contrivance, car, vehicle, boat, aircraft, airfields, air lanes, and fixtures or appurtenances thereof, or any other means of transportation whatsoever, whereon or whereby such war material or any troops of the United States, or of any associate nation, are being or may be transported either within the limits of the United States or upon the high seas or elsewhere; and all air-conditioning systems, dams, reservoirs, aqueducts, water and gas mains and pipes, structures and buildings, whereby or in connection with which air, water or gas is being furnished, or may be furnished, to any war premises or to the Armed Forces of the United States, or any associate nation, and all electric light and power, steam or pneumatic power, telephone and telegraph

plants, poles, wires, and fixtures, and wireless stations, and the buildings connected with the maintenance and operation thereof used to supply air, water, light, heat, power, or facilities of communication to any war premises or to the Armed Forces of the United States, or any associate nation.

The words “associate nation” mean any nation at war with any nation with which the United States is at war.

The words “national-defense material” include arms, armament, ammunition, livestock, forage, forest products and standing timber, stores of clothing, air, water, food, foodstuffs, fuel, supplies, munitions, and all other articles of whatever description and any part or ingredient thereof, intended for, adapted to, or suitable for the use of the United States in connection with the national defense or for use in or in connection with the producing, manufacturing, repairing, storing, mining, extracting, distributing, loading, unloading, or transporting of any of the materials or other articles hereinbefore mentioned or any part or ingredient thereof.

The words “national-defense premises” include all buildings, grounds, mines, or other places wherein such national-defense material is being produced, manufactured, repaired, stored, mined, extracted, distributed, loaded, unloaded, or transported, together with all machinery and appliances therein contained; and all forts, arsenals, navy yards, camps, prisons, or other installations of the Armed Forces of the United States.

The words “national-defense utilities” include all railroads, railways, electric lines, roads of whatever description, railroad or railway fixture, canal, lock, dam, wharf, pier, dock, bridge, building, structure, engine, machine, mechanical contrivance, car, vehicle, boat, aircraft, airfields, air lanes, and fixtures or appurtenances thereof, or any other means of transportation whatsoever, whereon or whereby such national-defense material, or any troops of the United States, are being or may be transported either within the limits of the United States or upon the high seas or elsewhere; and all air-conditioning systems, dams, reservoirs, aqueducts, water and gas mains and pipes, structures, and buildings, whereby or in connection with which air, water, or gas may be furnished to any national-defense premises or to the Armed Forces of the United States, and all electric light and power, steam or pneumatic power, telephone and telegraph plants, poles, wires, and fixtures and wireless stations, and the buildings connected with the maintenance and operation thereof used to supply air, water, light, heat, power, or facilities of communication to any national-defense premises or to the Armed Forces of the United States.

22. 18 U.S. Code § 2153 - Destruction of war material, war premises, or war utilities

(a)Whoever, when the United States is at war, or in times of national emergency as declared by the President or by the Congress, with intent to injure, interfere with, or obstruct the United States or any associate nation in preparing for or carrying on

the war or defense activities, or, with reason to believe that his act may injure, interfere with, or obstruct the United States or any associate nation in preparing for or carrying on the war or defense activities, willfully injures, destroys, contaminates or infects, or attempts to so injure, destroy, contaminate or infect any war material, war premises, or war utilities, shall be fined under this title or imprisoned not more than thirty years, or both.
(b)If two or more persons conspire to violate this section, and one or more of such persons do any act to effect the object of the conspiracy, each of the parties to such conspiracy shall be punished as provided in subsection (a) of this section.

23. 18 U.S. Code § 2154 - Production of defective war material, war premises, or war utilities

(a)Whoever, when the United States is at war, or in times of national emergency as declared by the President or by the Congress, with intent to injure, interfere with, or obstruct the United States or any associate nation in preparing for or carrying on the war or defense activities, or, with reason to believe that his act may injure, interfere with, or obstruct the United States or any associate nation in preparing for or carrying on the war or defense activities, willfully makes, constructs, or causes to be made or constructed in a defective manner, or attempts to make, construct, or cause to be made or constructed in a defective manner any war material, war premises or war utilities, or any tool, implement, machine, utensil, or receptacle used or employed in making, producing, manufacturing, or repairing any such war material, war premises or war utilities, shall be fined under this title or imprisoned not more than thirty years, or both.
(b)If two or more persons conspire to violate this section, and one or more of such persons do any act to effect the object of the conspiracy, each of the parties to such conspiracy shall be punished as provided in subsection (a) of this section.

24. 18 U.S. Code § 2155 - Destruction of national-defense materials, national-defense premises, or national-defense utilities

(a)Whoever, with intent to injure, interfere with, or obstruct the national defense of the United States, willfully injures, destroys, contaminates or infects, or attempts to so injure, destroy, contaminate or infect any national-defense material, national-defense premises, or national-defense utilities, shall be fined under this title or imprisoned not more than 20 years, or both, and, if death results to any person, shall be imprisoned for any term of years or for life.
(b)If two or more persons conspire to violate this section, and one or more of such persons do any act to effect the object of the conspiracy, each of the parties to such conspiracy shall be punished as provided in subsection (a) of this section

25. 18 U.S. Code § 2156 - Production of defective national-defense material, national-defense premises, or national-defense utilities

(a)Whoever, with intent to injure, interfere with, or obstruct the national defense of the United States, willfully makes, constructs, or attempts to make or construct in a defective manner, any national-defense material, national-defense premises or national-defense utilities, or any tool, implement, machine, utensil, or receptacle used or employed in making, producing, manufacturing, or repairing any such national-defense material, national-defense premises or national-defense utilities, shall be fined under this title or imprisoned not more than ten years, or both.
(b)If two or more persons conspire to violate this section, and one or more of such persons do any act to effect the object of the conspiracy, each of the parties to such conspiracy shall be punished as provided in subsection (a) of this section.

26. 18 U.S. Code § 2261A - Stalking

Whoever—
(1)travels in interstate or foreign commerce or is present within the special maritime and territorial jurisdiction of the United States, or enters or leaves Indian country, with the intent to kill, injure, harass, intimidate, or place under surveillance with intent to kill, injure, harass, or intimidate another person, and in the course of, or as a result of, such travel or presence engages in conduct that—
(A)places that person in reasonable fear of the death of, or serious bodily injury to—
(i)that person;
(ii)an immediate family member (as defined in section 115) of that person;
(iii)a spouse or intimate partner of that person; or
(iv)the pet, service animal, emotional support animal, or horse of that person; or
(B)causes, attempts to cause, or would be reasonably expected to cause substantial emotional distress to a person described in clause (i), (ii), or (iii) of subparagraph (A); or
(2)with the intent to kill, injure, harass, intimidate, or place under surveillance with intent to kill, injure, harass, or intimidate another person, uses the mail, any interactive computer service or electronic communication service or electronic communication system of interstate commerce, or any other facility of interstate or foreign commerce to engage in a course of conduct that—
(A)places that person in reasonable fear of the death of or serious bodily injury to a person, a pet, a service animal, an emotional support animal, or a horse described in clause (i), (ii), (iii), or (iv) of paragraph (1)(A); or
(B)causes, attempts to cause, or would be reasonably expected to cause substantial emotional distress to a person described in clause (i), (ii), or (iii) of paragraph (1)(A),

shall be punished as provided in section 2261(b) or section 2261B, as the case may be.

27. 18 U.S. Code § 2339 - Harboring or concealing terrorists

(a)Whoever harbors or conceals any person who he knows, or has reasonable grounds to believe, has committed, or is about to commit, an offense under section 32 (relating to destruction of aircraft or aircraft facilities), section 175 (relating to biological weapons), section 229 (relating to chemical weapons), section 831 (relating to nuclear materials), paragraph (2) or (3) of section 844(f) (relating to arson and bombing of government property risking or causing injury or death), section 1366(a) (relating to the destruction of an energy facility), section 2280 (relating to violence against maritime navigation), section 2332a (relating to weapons of mass destruction), or section 2332b (relating to acts of terrorism transcending national boundaries) of this title, section 236(a) (relating to sabotage of nuclear facilities or fuel) of the Atomic Energy Act of 1954 (42 U.S.C. 2284(a)), or section 46502 (relating to aircraft piracy) of title 49, shall be fined under this title or imprisoned not more than ten years, or both.
(b)A violation of this section may be prosecuted in any Federal judicial district in which the underlying offense was committed, or in any other Federal judicial district as provided by law.

28. 18 U.S. Code § 2339A - Providing material support to terrorists

(a)Offense.—
Whoever provides material support or resources or conceals or disguises the nature, location, source, or ownership of material support or resources, knowing or intending that they are to be used in preparation for, or in carrying out, a violation of section 32, 37, 81, 175, 229, 351, 831, 842(m) or (n), 844(f) or (i), 930(c), 956, 1091, 1114, 1116, 1203, 1361, 1362, 1363, 1366, 1751, 1992, 2155, 2156, 2280, 2281, 2332, 2332a, 2332b, 2332f, 2340A, or 2442 of this title, section 236 of the Atomic Energy Act of 1954 (42 U.S.C. 2284), section 46502 or 60123(b) of title 49, or any offense listed in section 2332b(g)(5)(B) (except for sections 2339A and 2339B) or in preparation for, or in carrying out, the concealment of an escape from the commission of any such violation, or attempts or conspires to do such an act, shall be fined under this title, imprisoned not more than 15 years, or both, and, if the death of any person results, shall be imprisoned for any term of years or for life. A violation of this section may be prosecuted in any Federal judicial district in which the underlying offense was committed, or in any other Federal judicial district as provided by law.
(b)Definitions.—As used in this section—

(1)the term “material support or resources” means any property, tangible or intangible, or service, including currency or monetary instruments or financial securities, financial services, lodging, training, expert advice or assistance, safehouses, false documentation or identification, communications equipment, facilities, weapons, lethal substances, explosives, personnel (1 or more individuals who may be or

include oneself), and transportation, except medicine or religious materials;
(2)the term “training” means instruction or teaching designed to impart a specific skill, as opposed to general knowledge; and
(3)the term “expert advice or assistance” means advice or assistance derived from scientific, technical or other specialized knowledge.

29. 18 U.S. Code § 2339B - Providing material support or resources to designated foreign terrorist organizations

(a)Prohibited Activities.—
(1)Unlawful conduct.—
Whoever knowingly provides material support or resources to a foreign terrorist organization, or attempts or conspires to do so, shall be fined under this title or imprisoned not more than 20 years, or both, and, if the death of any person results, shall be imprisoned for any term of years or for life. To violate this paragraph, a person must have knowledge that the organization is a designated terrorist organization (as defined in subsection (g)(6)), that the organization has engaged or engages in terrorist activity (as defined in section 212(a)(3)(B) of the Immigration and Nationality Act), or that the organization has engaged or engages in terrorism (as defined in section 140(d)(2) of the Foreign Relations Authorization Act, Fiscal Years 1988 and 1989).
(2)Financial institutions.—Except as authorized by the Secretary, any financial institution that becomes aware that it has possession of, or control over, any funds in which a foreign terrorist organization, or its agent, has an interest, shall—
(A)retain possession of, or maintain control over, such funds; and
(B)report to the Secretary the existence of such funds in accordance with regulations issued by the Secretary.
(b)Civil Penalty.—Any financial institution that knowingly fails to comply with subsection (a)(2) shall be subject to a civil penalty in an amount that is the greater of—
(A)$50,000 per violation; or
(B)twice the amount of which the financial institution was required under subsection (a)(2) to retain possession or control.
(c)Injunction.—
Whenever it appears to the Secretary or the Attorney General that any person is engaged in, or is about to engage in, any act that constitutes, or would constitute, a violation of this section, the Attorney General may initiate civil action in a district court of the United States to enjoin such violation.
(d)Extraterritorial Jurisdiction.—

(1)In general.—There is jurisdiction over an offense under subsection (a) if—

(A)an offender is a national of the United States (as defined in section 101(a)(22) of the Immigration and Nationality Act (8 U.S.C. 1101(a)(22))) or an alien lawfully admitted for permanent residence in the United States (as defined in section 101(a)(20) of the Immigration and Nationality Act (8 U.S.C. 1101(a)(20)));

(B)an offender is a stateless person whose habitual residence is in the United States;

(C)after the conduct required for the offense occurs an offender is brought into or found in the United States, even if the conduct required for the offense occurs outside the United States;

(D)the offense occurs in whole or in part within the United States;

(E)the offense occurs in or affects interstate or foreign commerce; or

(F)an offender aids or abets any person over whom jurisdiction exists under this paragraph in committing an offense under subsection (a) or conspires with any person over whom jurisdiction exists under this paragraph to commit an offense under subsection (a).

(2)Extraterritorial jurisdiction.—

There is extraterritorial Federal jurisdiction over an offense under this section.

(e)Investigations.—

(1)In general.—

The Attorney General shall conduct any investigation of a possible violation of this section, or of any license, order, or regulation issued pursuant to this section.

(2)Coordination with the department of the treasury.—The Attorney General shall work in coordination with the Secretary in investigations relating to—

(A)the compliance or noncompliance by a financial institution with the requirements of subsection (a)(2); and

(B)civil penalty proceedings authorized under subsection (b).

(3)Referral.—

Any evidence of a criminal violation of this section arising in the course of an investigation by the Secretary or any other Federal agency shall be referred immediately to the Attorney General for further investigation. The Attorney General shall timely notify the Secretary of any action taken on referrals from the Secretary, and may refer investigations to the Secretary for remedial licensing or civil penalty action.

30. 18 U.S. Code § 2339C - Prohibitions against the financing of terrorism

(a)Offenses.—

(1)In general.—Whoever, in a circumstance described in subsection (b), by any means, directly or indirectly, unlawfully and willfully provides or collects funds with the intention that such funds be used, or with the knowledge that such funds are to be used, in full or in part, in order to carry out—

(A)an act which constitutes an offense within the scope of a treaty specified in subsection (e)(7), as implemented by the United States, or

(B)any other act intended to cause death or serious bodily injury to a civilian, or to any other person not taking an active part in the hostilities in a situation of armed conflict, when the purpose of such act, by its nature or context, is to intimidate a population, or to compel a government or an international organization to do or to abstain from doing any act,

shall be punished as prescribed in subsection (d)(1).

(2)Attempts and conspiracies.—

Whoever attempts or conspires to commit an offense under paragraph (1) shall be punished as prescribed in subsection (d)(1).

(3)Relationship to predicate act.—

For an act to constitute an offense set forth in this subsection, it shall not be necessary that the funds were actually used to carry out a predicate act.

(b)Jurisdiction.—There is jurisdiction over the offenses in subsection (a) in the following circumstances—

(1)the offense takes place in the United States and—

(A)a perpetrator was a national of another state or a stateless person;

(B)on board a vessel flying the flag of another state or an aircraft which is registered under the laws of another state at the time the offense is committed;

(C)on board an aircraft which is operated by the government of another state;

(D)a perpetrator is found outside the United States;

(E)was directed toward or resulted in the carrying out of a predicate act against—

(i)a national of another state; or

(ii)another state or a government facility of such state, including its embassy or other diplomatic or consular premises of that state;

(F)was directed toward or resulted in the carrying out of a predicate act committed in an attempt to compel another

state or international organization to do or abstain from doing any act; or

(G)was directed toward or resulted in the carrying out of a predicate act—

(i)outside the United States; or

(ii)within the United States, and either the offense or the predicate act was conducted in, or the results thereof affected, interstate or foreign commerce;

(2)the offense takes place outside the United States and—

(A)a perpetrator is a national of the United States or is a stateless person whose habitual residence is in the United States;

(B)a perpetrator is found in the United States; or

(C)was directed toward or resulted in the carrying out of a predicate act against—

(i)any property that is owned, leased, or used by the United States or by any department or agency of the United States, including an embassy or other diplomatic or consular premises of the United States;

(ii)any person or property within the United States;

(iii)any national of the United States or the property of such national; or

(iv)any property of any legal entity organized under the laws of the United States, including any of its States, districts, commonwealths, territories, or possessions;

(3)the offense is committed on board a vessel flying the flag of the United States or an aircraft which is registered under the laws of the United States at the time the offense is committed;

(4)the offense is committed on board an aircraft which is operated by the United States; or

(5)the offense was directed toward or resulted in the carrying out of a predicate act committed in an attempt to compel the United States to do or abstain from doing any act.

(c)Concealment.—Whoever—

(1)

(A)is in the United States; or

(B)is outside the United States and is a national of the United States or a legal entity organized under the laws of the United States (including any of its States, districts, commonwealths, territories, or possessions); and

(2)knowingly conceals or disguises the nature, location, source, ownership, or control of any material support or resources, or any funds or proceeds of such funds—

(A)knowing or intending that the support or resources are to be provided, or knowing that the support or resources were provided, in violation of section 2339B of this title; or

(B)knowing or intending that any such funds are to be provided or collected, or knowing that the funds were provided or collected, in violation of subsection (a),

shall be punished as prescribed in subsection (d)(2).

(d)Penalties.—

(1)Subsection (a).—

Whoever violates subsection (a) shall be fined under this title, imprisoned for not more than 20 years, or both.

(2)Subsection (c).—

Whoever violates subsection (c) shall be fined under this title, imprisoned for not more than 10 years, or both.

(e)Definitions.—In this section—

(1)the term “funds” means assets of every kind, whether tangible or intangible, movable or immovable, however acquired, and legal documents or instruments in any form, including electronic or digital, evidencing title to, or interest in, such assets, including coin, currency, bank credits, travelers checks, bank checks, money orders, shares, securities, bonds, drafts, and letters of credit;

(2)the term “government facility” means any permanent or temporary facility or conveyance that is used or occupied by representatives of a state, members of a government, the legislature, or the judiciary, or by officials or employees of a state or any other public authority or entity or by employees or officials of an intergovernmental organization in connection with their official duties;

(3)the term “proceeds” means any funds derived from or obtained, directly or indirectly, through the commission of an offense set forth in subsection (a);

(4)the term “provides” includes giving, donating, and transmitting;

(5)the term “collects” includes raising and receiving;

(6)the term “predicate act” means any act referred to in subparagraph (A) or (B) of subsection (a)(1);

(7)the term “treaty” means—

(A)the Convention for the Suppression of Unlawful Seizure of Aircraft, done at The Hague on December 16, 1970;

(B)the Convention for the Suppression of Unlawful Acts against the Safety of Civil Aviation, done at Montreal on September 23, 1971;

(C)the Convention on the Prevention and Punishment of Crimes against Internationally Protected Persons, including

Diplomatic Agents, adopted by the General Assembly of the United Nations on December 14, 1973;

(D)the International Convention against the Taking of Hostages, adopted by the General Assembly of the United Nations on December 17, 1979;

(E)the Convention on the Physical Protection of Nuclear Material, adopted at Vienna on March 3, 1980;

(F)the Protocol for the Suppression of Unlawful Acts of Violence at Airports Serving International Civil Aviation, supplementary to the Convention for the Suppression of Unlawful Acts against the Safety of Civil Aviation, done at Montreal on February 24, 1988;

(G)the Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation, done at Rome on March 10, 1988;

(H)the Protocol for the Suppression of Unlawful Acts against the Safety of Fixed Platforms located on the Continental Shelf, done at Rome on March 10, 1988; or

(I)the International Convention for the Suppression of Terrorist Bombings, adopted by the General Assembly of the United Nations on December 15, 1997;

(8)the term “intergovernmental organization” includes international organizations;

(9)the term “international organization” has the same meaning as in section 1116(b)(5) of this title;

(10)the term “armed conflict” does not include internal disturbances and tensions, such as riots, isolated and sporadic acts of violence, and other acts of a similar nature;

(11)the term “serious bodily injury” has the same meaning as in section 1365(g)(3) of this title; [1]

(12)the term “national of the United States” has the meaning given that term in section 101(a)(22) of the Immigration and Nationality Act (8 U.S.C. 1101(a)(22));

(13)the term “material support or resources” has the same meaning given that term in section 2339B(g)(4) of this title; and

(14)the term “state” has the same meaning as that term has under international law, and includes all political subdivisions thereof.

(f)Civil Penalty.—

In addition to any other criminal, civil, or administrative liability or penalty, any legal entity located within the United States or organized under the laws of the United States, including any of the laws of its States, districts, commonwealths, territories, or possessions, shall be liable to the United States for the sum of at least $10,000, if a person responsible for the management or control of that legal entity has, in that capacity, committed an offense set forth in subsection (a).

31. 18 U.S. Code § 2340 - Definitions

As used in this chapter—

(1)“torture” means an act committed by a person acting under the color of law specifically intended to inflict severe physical or mental pain or suffering (other than pain or suffering incidental to lawful sanctions) upon another person within his custody or physical control;

(2)“severe mental pain or suffering” means the prolonged mental harm caused by or resulting from—

(A)the intentional infliction or threatened infliction of severe physical pain or suffering;

(B)the administration or application, or threatened administration or application, of mind-altering substances or other procedures calculated to disrupt profoundly the senses or the personality;

(C)the threat of imminent death; or

(D)the threat that another person will imminently be subjected to death, severe physical pain or suffering, or the administration or application of mind-altering substances or other procedures calculated to disrupt profoundly the senses or personality; and

(3)“United States” means the several States of the United States, the District of Columbia, and the commonwealths, territories, and possessions of the United States.

32. 18 U.S. Code § 2340A - Torture

(a)Offense.—

Whoever outside the United States commits or attempts to commit torture shall be fined under this title or imprisoned not more than 20 years, or both, and if death results to any person from conduct prohibited by this subsection, shall be punished by death or imprisoned for any term of years or for life.

(b)Jurisdiction.—There is jurisdiction over the activity prohibited in subsection (a) if —

(1)the alleged offender is a national of the United States; or

(2)the alleged offender is present in the United States, irrespective of the nationality of the victim or alleged offender.

(c)Conspiracy.—

A person who conspires to commit an offense under this section shall be subject to the same penalties (other than the penalty of death) as the penalties prescribed for the offense, the commission of which was the object of the conspiracy.

33. 18 U.S. Code § 2340B - Exclusive remedies

Nothing in this chapter shall be construed as precluding the application of State or local laws on the same subject, nor shall anything in this chapter be construed as

creating any substantive or procedural right enforceable by law by any party in any civil proceeding.

34. 18 U.S. Code § 2381 - Treason

Whoever, owing allegiance to the United States, levies war against them or adheres to their enemies, giving them aid and comfort within the United States or elsewhere, is guilty of treason and shall suffer death, or shall be imprisoned not less than five years and fined under this title but not less than $10,000; and shall be incapable of holding any office under the United States.

35. 18 U.S. Code § 2382 - Misprision of treason

Whoever, owing allegiance to the United States and having knowledge of the commission of any treason against them, conceals and does not, as soon as may be, disclose and make known the same to the President or to some judge of the United States, or to the governor or to some judge or justice of a particular State, is guilty of misprision of treason and shall be fined under this title or imprisoned not more than seven years, or both.

36. 18 U.S. Code § 2383 - Rebellion or insurrection

Whoever incites, sets on foot, assists, or engages in any rebellion or insurrection against the authority of the United States or the laws thereof, or gives aid or comfort thereto, shall be fined under this title or imprisoned not more than ten years, or both; and shall be incapable of holding any office under the United States.

37. 18 U.S. Code § 2384 - Seditious conspiracy

If two or more persons in any State or Territory, or in any place subject to the jurisdiction of the United States, conspire to overthrow, put down, or to destroy by force the Government of the United States, or to levy war against them, or to oppose by force the authority thereof, or by force to prevent, hinder, or delay the execution of any law of the United States, or by force to seize, take, or possess any property of the United States contrary to the authority thereof, they shall each be fined under this title or imprisoned not more than twenty years, or both.

38. 18 U.S. Code § 2385 - Advocating overthrow of Government

Whoever knowingly or willfully advocates, abets, advises, or teaches the duty, necessity, desirability, or propriety of overthrowing or destroying the government of the United States or the government of any State, Territory, District or Possession thereof, or the government of any political subdivision therein, by force or violence, or by the assassination of any officer of any such government; or

Whoever, with intent to cause the overthrow or destruction of any such government, prints, publishes, edits, issues, circulates, sells, distributes, or publicly

displays any written or printed matter advocating, advising, or teaching the duty, necessity, desirability, or propriety of overthrowing or destroying any government in the United States by force or violence, or attempts to do so; or

Whoever organizes or helps or attempts to organize any society, group, or assembly of persons who teach, advocate, or encourage the overthrow or destruction of any such government by force or violence; or becomes or is a member of, or affiliates with, any such society, group, or assembly of persons, knowing the purposes thereof—

Shall be fined under this title or imprisoned not more than twenty years, or both, and shall be ineligible for employment by the United States or any department or agency thereof, for the five years next following his conviction.

If two or more persons conspire to commit any offense named in this section, each shall be fined under this title or imprisoned not more than twenty years, or both, and shall be ineligible for employment by the United States or any department or agency thereof, for the five years next following his conviction.

As used in this section, the terms “organizes” and “organize”, with respect to any society, group, or assembly of persons, include the recruiting of new members, the forming of new units, and the regrouping or expansion of existing clubs, classes, and other units of such society, group, or assembly of persons.

39. Related Complaints

related to the listed crimes are as follows: 2022-1782862, 2023-1169539 forgery, 2023-147546, 2023-179141 human trafficking (RCMP Battleford), 2023-70016 Sexual Assault(RCMP Turner Valley, AB), 2023-111338 human trafficking (RCMP Turner Valley, AB), 23-1588 culpable negligence (covid related), 23-1430 Sexual Assault/human trafficking (Volusia County Sheriff, Florida), #223230811 Criminal Harassment/ Human Trafficking agency Assist (Austin Texas Police Department), Calgary Police Service File #22453817 and #22453637, RCMP file 20221414593, 2023-72400 (torture, Chestermere RCMP), 2023-59269, 2023-59284 (Chestermere RCMP), 2022-1715002 (RCMP Alberta), North Charleston Police Department #2022023800 Aggravated Domestic Assault with a Firearm, 2022023857 intimidation of a witness. This can be found from the department) and #23-0011116 Sexual Assault (Austin Police Department). San Antonio PD #22273597. RCMP HQ in Ottawa has been advised to oversee the torture investigations in North Battleford because the torture investigation has been referred to the jurisdiction that tortured the victims.

MEMORIAL UNIVERSITY OF NEWFOUNDLAND

It is hereby certified that

Dale James Richardson

having completed the required program of studies
is admitted to the degree of

Bachelor of Technology

with all the rights and privileges attendant thereon
GIVEN UNDER THE SEAL OF THE UNIVERSITY
this 8th day of February 2022

Chancellor Susan Hrynyj

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University Registrar (Interim) Jennifer Porter

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Unusual Features of the SARS-CoV-2 Genome Suggesting Sophisticated Laboratory Modification Rather Than Natural Evolution and Delineation of Its Probable Synthetic Route

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Abstract

The COVID-19 pandemic caused by the novel coronavirus SARS-CoV-2 has led to over 910,000 deaths worldwide and unprecedented decimation of the global economy. Despite its tremendous impact, the origin of SARS-CoV-2 has remained mysterious and controversial. The natural origin theory, although widely accepted, lacks substantial support. The alternative theory that the virus may have come from a research laboratory is, however, strictly censored on peer-reviewed scientific journals. Nonetheless, SARS-CoV-2 shows biological characteristics that are inconsistent with a naturally occurring, zoonotic virus. In this report, we describe the genomic, structural, medical, and literature evidence, which, when considered together, strongly contradicts the natural origin theory. The evidence shows that SARS-CoV-2 should be a laboratory product created by using bat coronaviruses ZC45 and/or ZXC21 as a template and/or backbone. Building upon the evidence, we further postulate a synthetic route for SARS-CoV-2, demonstrating that the laboratory-creation of this coronavirus is convenient and can be accomplished in approximately six months. Our work emphasizes the need for an independent investigation into the relevant research laboratories. It also argues for a critical look into certain recently published data, which, albeit problematic, was used to support and claim a natural origin of SARS-CoV-2. From a public health perspective, these actions are necessary as knowledge of the origin of SARS-CoV-2 and of how the virus entered the human population are of pivotal importance in the fundamental control of the COVID-19 pandemic as well as in preventing similar, future pandemics.

Publication Note (July 17th, 2021):

The three Yan reports used scientific evidence and analyses to prove that SARS-CoV-2 is an *Unrestricted Bioweapon* created by military scientists of the Chinese Communist Party (CCP) regime. These reports have played a pivotal role in revealing the true identity of the ongoing *Unrestricted Biowarfare*. For this reason, the CCP and its allies have been constantly launching attacks at the Yan Reports. Very recently, the *Rule of Law Foundation* (ROLF) and *Rule of Law Society* (ROLS), which we have listed as our honorary affiliation in our reports, requested *Zenodo* to have the original uploads of our reports closed. This was done by the ROLF & ROLS without informing us authors or seeking our agreement. This is unacceptable because the work was done by us authors independently with no financial assistance provided by the ROLF & ROLS or any other organization. Their action here has no scientific

basis and is against the rules of scientific publications. To restore the availability of our reports to the world, we have therefore re-uploaded the three Yan reports. Our affiliation has been changed to *Yan Research – An Independent Research Team*.

The current report was originally published on September 14th, 2020. As of July 16th, 2021, the original *Zenodo* upload of it has been viewed 1,339,786 times and downloaded 797,325 times. Upon mutual agreement, Dr. Jie Guan opted out of this publication and his contributions have instead been specified in the acknowledgements.

Introduction

COVID-19 has caused a world-wide pandemic, the scale and severity of which are unprecedented. Despite the tremendous efforts taken by the global community, management and control of this pandemic remains difficult and challenging.

As a coronavirus, SARS-CoV-2 differs significantly from other respiratory and/or zoonotic viruses: it attacks multiple organs; it is capable of undergoing a long period of asymptomatic infection; it is highly transmissible and significantly lethal in high-risk populations; it is well-adapted to humans since the very start of its emergence[1]; it is highly efficient in binding the human ACE2 receptor (hACE2), the affinity of which is greater than that associated with the ACE2 of any other potential host[2,3].

The origin of SARS-CoV-2 is still the subject of much debate. A widely cited *Nature Medicine* publication has claimed that SARS-CoV-2 most likely came from nature[4]. However, the article and its central conclusion are now being challenged by scientists from all over the world[5-15]. In addition, authors of this *Nature Medicine* article show signs of conflict of interests[16,17], raising further concerns on the credibility of this publication.

The existing scientific publications supporting a natural origin theory rely heavily on a single piece of evidence – a previously discovered bat coronavirus named RaTG13, which shares a 96% nucleotide sequence identity with SARS-CoV-2[18]. However, the existence of RaTG13 in nature and the truthfulness of its reported sequence are being widely questioned[6-9,19-21]. It is noteworthy that scientific journals have clearly censored any dissenting opinions that suggest a non-natural origin of SARS-CoV-2[8,22]. Because of this censorship, articles questioning either the natural origin of SARS-CoV-2 or the actual existence of RaTG13, although of high quality scientifically, can only exist as preprints[5-9,19-21] or other non-peer-reviewed articles published on various online platforms[10-13,23]. Nonetheless, analyses of these reports have repeatedly pointed to severe problems and a probable fraud associated with the reporting of RaTG13[6,8,9,19-21]. Therefore, the theory that fabricated scientific data has been published to mislead the world's efforts in tracing the origin of SARS-CoV-2 has become substantially convincing and is interlocked with the notion that SARS-CoV-2 is of a non-natural origin.

Consistent with this notion, genomic, structural, and literature evidence also suggest a non-natural origin of SARS-CoV-2. In addition, abundant literature indicates that gain-of-function research has long advanced to the stage where viral genomes can be precisely engineered and manipulated to enable the creation of novel coronaviruses possessing unique properties. In this report, we present such evidence and the associated analyses. Part 1 of the report describes the genomic and structural features of SARS-CoV-2, the presence of which could be consistent with the theory that the virus is a product of laboratory modification beyond what could be afforded by simple serial viral passage. Part 2 of the report describes a highly probable pathway for the laboratory creation of SARS-CoV-2, key steps of which are supported by evidence present in the viral genome. Importantly, part 2 should be viewed as a demonstration of how SARS-CoV-2 could be conveniently created in a laboratory in a short period of time using available materials and well-documented techniques. This report is produced by a team of experienced scientists using our combined expertise in virology, molecular biology, structural biology, computational biology, vaccine development, and medicine.

1. Has SARS-CoV-2 been subjected to *in vitro* manipulation?

We present three lines of evidence to support our contention that laboratory manipulation is part of the history of SARS-CoV-2:

i. The genomic sequence of SARS-CoV-2 is suspiciously similar to that of a bat coronavirus discovered by military laboratories in the Third Military Medical University (Chongqing, China) and the Research Institute for Medicine of Nanjing Command (Nanjing, China).

ii. The receptor-binding motif (RBM) within the Spike protein of SARS-CoV-2, which determines the host specificity of the virus, resembles that of SARS-CoV from the 2003 epidemic in a suspicious manner. Genomic evidence suggests that the RBM has been genetically manipulated.

iii. SARS-CoV-2 contains a unique furin-cleavage site in its Spike protein, which is known to greatly enhance viral infectivity and cell tropism. Yet, this cleavage site is completely absent in this particular class of coronaviruses found in nature. In addition, rare codons associated with this additional sequence suggest the strong possibility that this furin-cleavage site is not the product of natural evolution and could have been inserted into the SARS-CoV-2 genome artificially by techniques other than simple serial passage or multi-strain recombination events inside co-infected tissue cultures or animals.

1.1 Genomic sequence analysis reveals that ZC45, or a closely related bat coronavirus, should be the backbone used for the creation of SARS-CoV-2

The structure of the ~30,000 nucleotides-long SARS-CoV-2 genome is shown in Figure 1. Searching the NCBI sequence database reveals that, among all known coronaviruses, there were two related bat coronaviruses, ZC45 and ZXC21, that share the highest sequence identity with SARS-CoV-2 (each bat coronavirus is ~89% identical to SARS-CoV-2 on the nucleotide level). Similarity between the genome of SARS-CoV-2 and those of representative β coronaviruses is depicted in Figure 1. ZXC21, which is 97% identical to and shares a very similar profile with ZC45, is not shown. Note that the RaTG13 virus is excluded from this analysis given the strong evidence suggesting that its sequence may have been fabricated and the virus does not exist in nature[2,6-9]. (*A follow-up report, which summarizes the up-to-date evidence proving the spurious nature of RaTG13, will be submitted soon*)

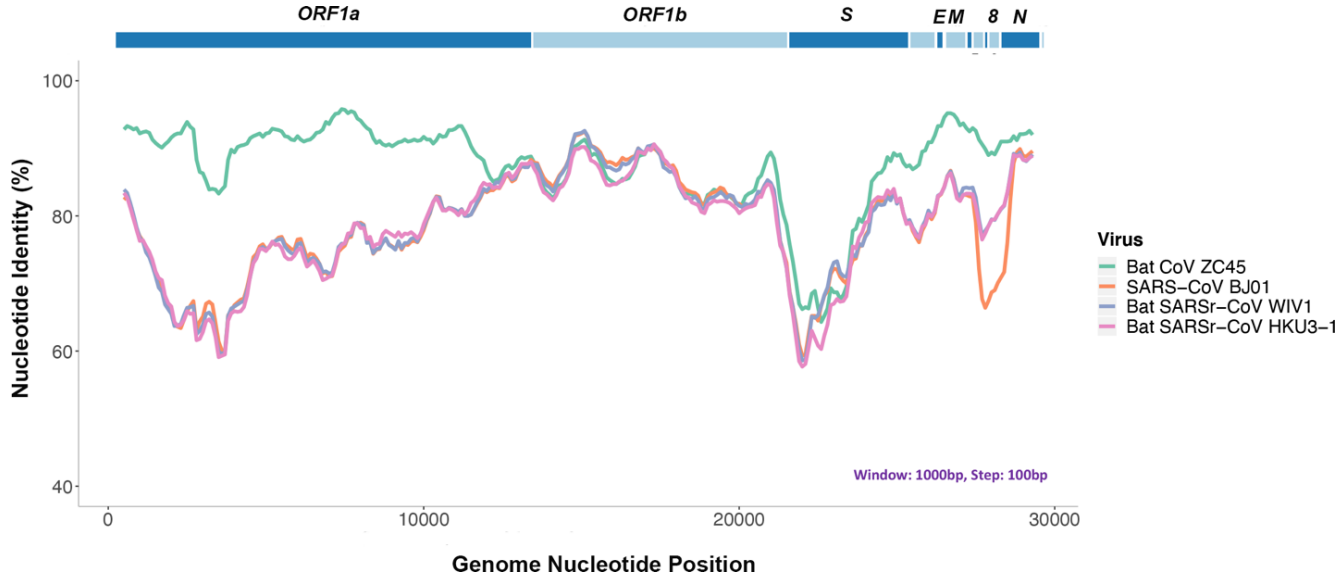

Figure 1. Genomic sequence analysis reveals that bat coronavirus ZC45 is the closest match to SARS-CoV-2. *Top: genomic organization of SARS-CoV-2 (2019-nCoV WIV04). Bottom: similarity plot based on the full-length genome of 2019-nCoV WIV04. Full-length genomes of SARS-CoV BJ01, bat SARSr-CoV WIV1, bat SARSr-CoV HKU3-1, bat coronavirus ZC45 were used as reference sequences.*

When SARS-CoV-2 and ZC45/ZXC21 are compared on the amino acid level, a high sequence identity is observed for most of the proteins. The Nucleocapsid protein is 94% identical. The Membrane protein is 98.6% identical. The S2 portion (2nd half) of the Spike protein is 95% identical. Importantly, the Orf8 protein is 94.2% identical and the E protein is 100% identical.

Orf8 is an accessory protein, the function of which is largely unknown in most coronaviruses, although recent data suggests that Orf8 of SARS-CoV-2 mediates the evasion of host adaptive immunity by downregulating MHC-I[24]. Normally, Orf8 is poorly conserved in coronaviruses[25]. Sequence blast indicates that, while the Orf8 proteins of ZC45/ZXC21 share a 94.2% identity with SARS-CoV-2 Orf8, no other coronaviruses share more than 58% identity with SARS-CoV-2 on this particular protein. The very high homology here on the normally poorly conserved Orf8 protein is highly unusual.

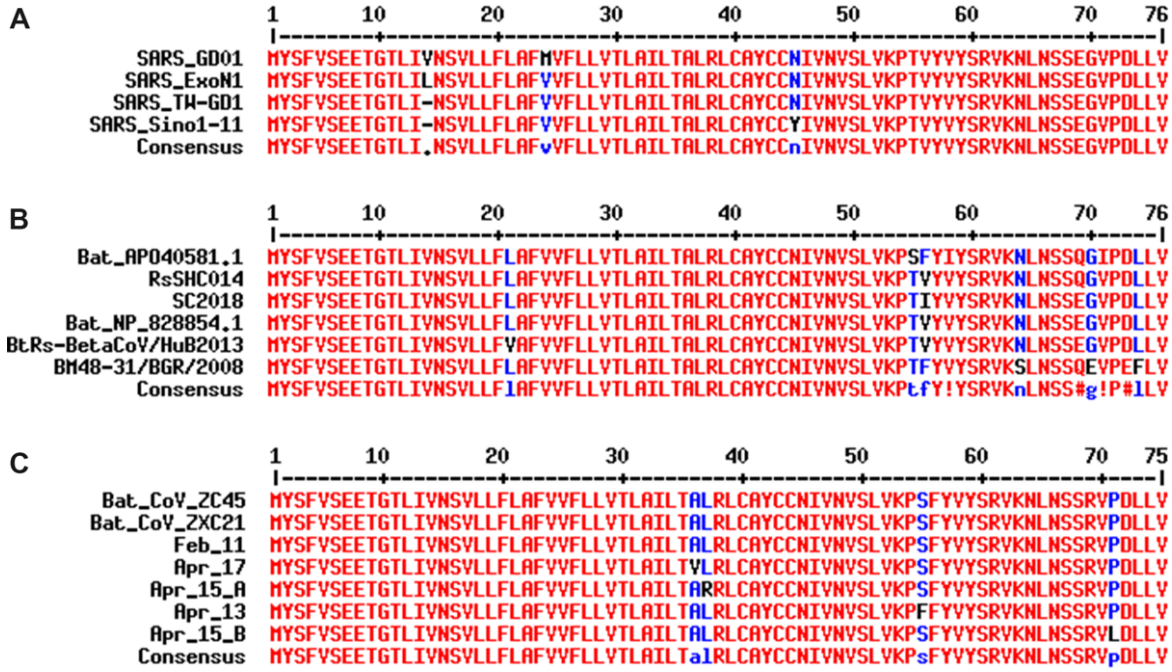

Figure 2. Sequence alignment of the E proteins from different β coronaviruses demonstrates the E protein's permissiveness and tendency toward amino acid mutations. *A. Mutations have been observed in different strains of SARS-CoV. GenBank accession numbers: SARS_GD01: AY278489.2, SARS_ExoN1: ACB69908.1, SARS_TW_GD1: AY451881.1, SARS_Sino1_11: AY485277.1. B. Alignment of E proteins from related bat coronaviruses indicates its tolerance of mutations at multiple positions. GenBank accession numbers: Bat_AP040581.1: APO40581.1, RsSHC014: KC881005.1, SC2018: MK211374.1, Bat_NP_828854.1: NP_828854.1, BtRs-BetaCoV/HuB2013: AIA62312.1, BM48-31/BGR/2008: YP_003858586.1. C. While the early copies of SARS-CoV-2 share 100% identity on the E protein with ZC45 and ZXC21, sequencing data of SARS-CoV-2 from April 2020 indicates that mutation has occurred at multiple positions. Accession numbers of viruses: Feb_11: MN997409, ZC45: MG772933.1, ZXC21: MG772934, Apr_13: MT326139, Apr_15_A: MT263389, Apr_15_B: MT293206, Apr_17: MT350246. Alignments were done using the MultAlin webserver (http://multalin.toulouse.inra.fr/multalin/).*

The coronavirus E protein is a structural protein, which is embedded in and lines the interior of the membrane envelope of the virion[26]. The E protein is tolerant of mutations as evidenced in both SARS (Figure 2A) and related bat coronaviruses (Figure 2B). This tolerance to amino acid mutations of the E protein is further evidenced in the current SARS-CoV-2 pandemic. After only a short two-month spread of the virus since its outbreak in humans, the E proteins in SARS-CoV-2 have already undergone mutational changes. Sequence data obtained during the month of April reveals that mutations have occurred at four different locations in different strains (Figure 2C). Consistent with this finding, sequence blast analysis indicates that, with the exception of SARS-CoV-2, no known coronaviruses share 100% amino acid sequence identity on the E protein with ZC45/ZXC21 (*suspicious coronaviruses published after the start of the current pandemic are excluded*[18,27-31]). Although 100% identity on the E protein has been observed between SARS-CoV and certain SARS-related bat coronaviruses, none of those pairs simultaneously share over 83% identity on the Orf8 protein[32]. Therefore, the 94.2% identity on the Orf8 protein, 100% identity on the E protein, and the overall genomic/amino acid-level resemblance between SARS-CoV-2 and ZC45/ZXC21 are highly unusual. Such evidence, when considered together, is consistent with a hypothesis that the SARS-CoV-2 genome has an origin based on the use of ZC45/ZXC21 as a backbone and/or template for genetic gain-of-function modifications.

Importantly, ZC45 and ZXC21 are bat coronaviruses that were discovered (between July 2015 and February 2017), isolated, and characterized by military research laboratories in the Third Military Medical University (Chongqing, China) and the Research Institute for Medicine of Nanjing Command (Nanjing, China). The data and associated work were published in 2018[33,34]. Clearly, this backbone/template, which is essential for the creation of SARS-CoV-2, exists in these and other related research laboratories.

What strengthens our contention further is the published RaTG13 virus[18], the genomic sequence of which is reportedly 96% identical to that of SARS-CoV-2. While suggesting a natural origin of SARS-CoV-2, the RaTG13 virus also diverted the attention of both the scientific field and the general public away from ZC45/ZXC21[4,18]. In fact, a Chinese BSL-3 lab (the Shanghai Public Health Clinical Centre), which published a *Nature* article reporting a conflicting close phylogenetic relationship between SARS-CoV-2 and ZC45/ZXC21 rather than with RaTG13[35], was quickly shut down for "rectification"[36]. It is believed that the researchers of that laboratory were being punished for having disclosed the SARS-CoV-2—ZC45/ZXC21 connection. On the other hand, substantial evidence has accumulated, pointing to severe problems associated with the reported sequence of RaTG13 as well as questioning the actual existence of this bat virus in nature[6,7,19-21]. A very recent publication also indicated that the receptor-binding domain (RBD) of the RaTG13's Spike protein could not bind ACE2 of two different types of horseshoe bats (they closely relate to the horseshoe bat *R. affinis*, RaTG13's alleged natural host)[2], implicating the inability of RaTG13 to infect horseshoe bats. This finding further substantiates the suspicion that the reported sequence of RaTG13 could have been fabricated as the Spike protein encoded by this sequence does not seem to carry the claimed function. The fact that a virus has been fabricated to shift the attention away from ZC45/ZXC21 speaks for an actual role of ZC45/ZXC21 in the creation of SARS-CoV-2.

1.2 The receptor-binding motif of SARS-CoV-2 Spike cannot be born from nature and should have been created through genetic engineering

The Spike proteins decorate the exterior of the coronavirus particles. They play an important role in infection as they mediate the interaction with host cell receptors and thereby help determine the host range and tissue tropism of the virus. The Spike protein is split into two halves (Figure 3). The front or N-terminal half is named S1, which is fully responsible for binding the host receptor. In both SARS-CoV

and SARS-CoV-2 infections, the host cell receptor is hACE2. Within S1, a segment of around 70 amino acids makes direct contacts with hACE2 and is correspondingly named the receptor-binding motif (RBM) (Figure 3C). In SARS-CoV and SARS-CoV-2, the RBM fully determines the interaction with hACE2. The C-terminal half of the Spike protein is named S2. The main function of S2 includes maintaining trimer formation and, upon successive protease cleavages at the S1/S2 junction and a downstream S2' position, mediating membrane fusion to enable cellular entry of the virus.

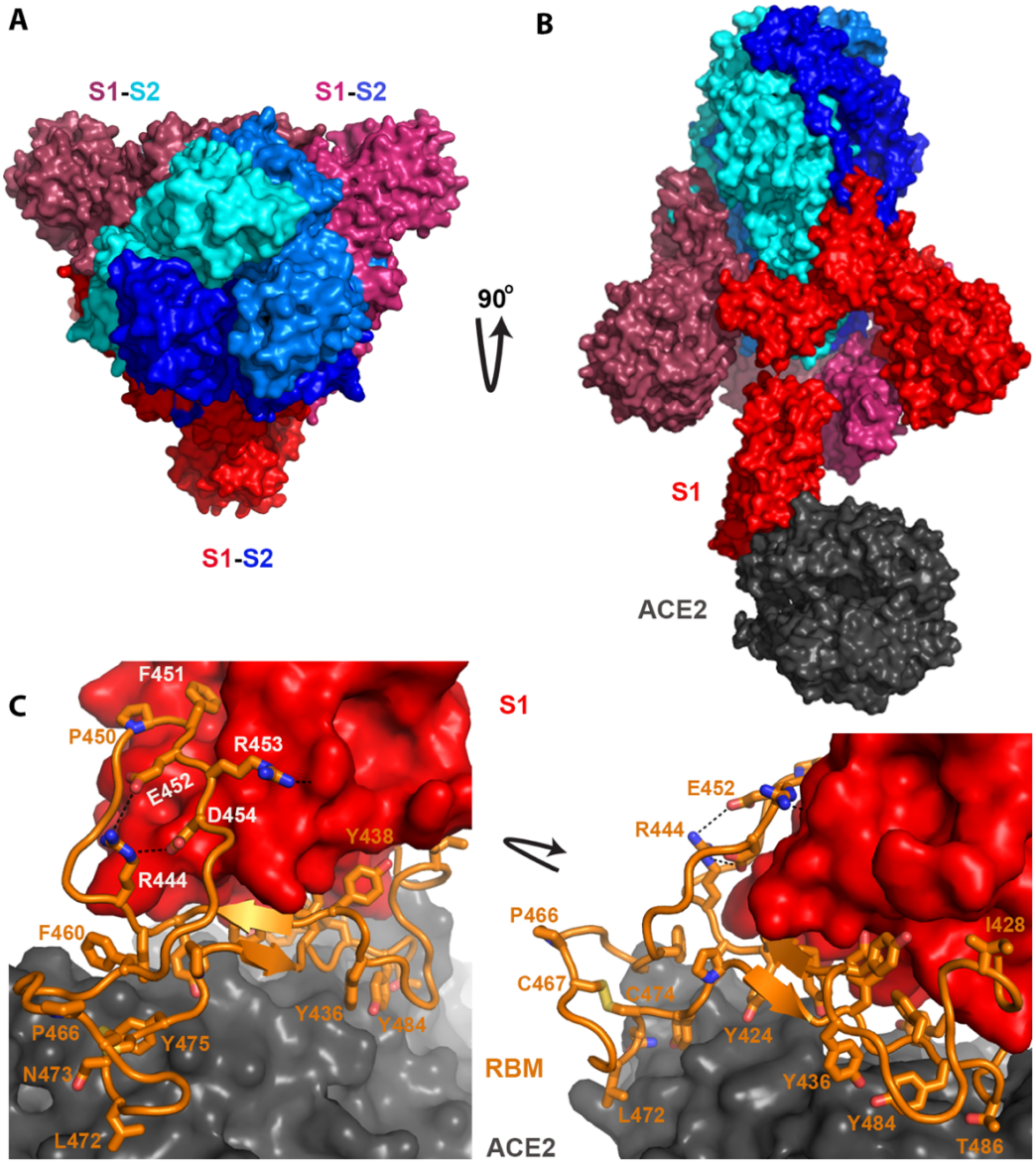

Figure 3. Structure of the SARS Spike protein and how it binds to the hACE2 receptor. *Pictures were generated based on PDB ID: 6acj[37]. A) Three spike proteins, each consisting of a S1 half and a S2 half, form a trimer. B) The S2 halves (shades of blue) are responsible for trimer formation, while the S1 portion (shades of red) is responsible for binding hACE2 (dark gray). C) Details of the binding between S1 and hACE2. The RBM of S1, which is important and sufficient for binding, is colored in orange. Residues within the RBM that are important for either hACE2 interaction or protein folding are shown as sticks (residue numbers follow the SARS Spike sequence).*

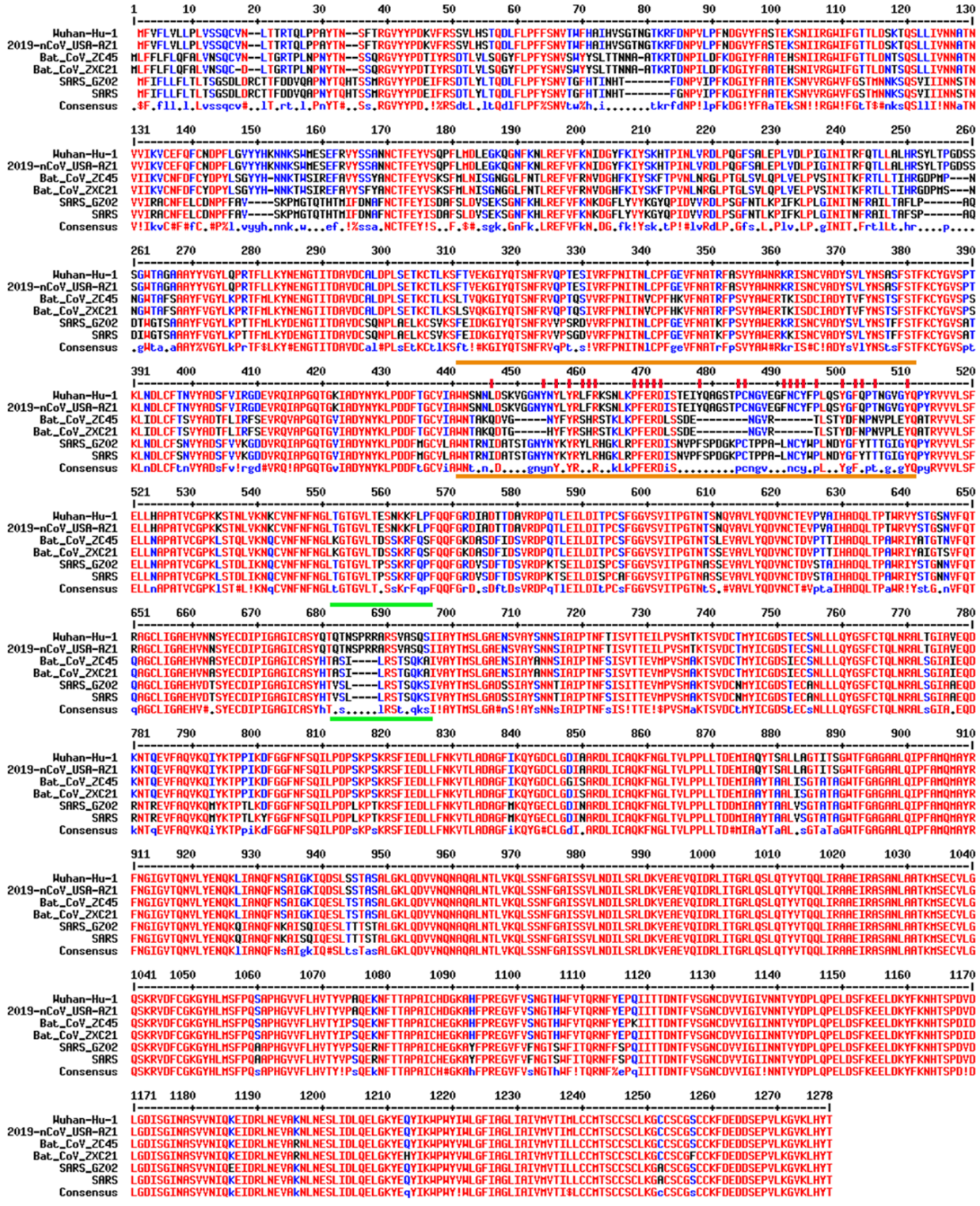

Figure 4. Sequence alignment of the spike proteins from relevant coronaviruses*. Viruses being compared include SARS-CoV-2 (Wuhan-Hu-1: NC_045512, 2019-nCoV_USA-AZ1: MN997409), bat coronaviruses (Bat_CoV_ZC45: MG772933, Bat_CoV_ZXC21: MG772934), and SARS coronaviruses (SARS_GZ02: AY390556, SARS: NC_004718.3). Region marked by two orange lines is the receptor-binding motif (RBM), which is important for interaction with the hACE2 receptor. Essential residues are additionally highlighted by red sticks on top. Region marked by two green lines is a furin-cleavage site that exists only in SARS-CoV-2 but not in any other lineage B β coronavirus.*

Similar to what is observed for other viral proteins, S2 of SARS-CoV-2 shares a high sequence identity (95%) with S2 of ZC45/ZXC21. In stark contrast, between SARS-CoV-2 and ZC45/ZXC21, the S1 protein, which dictates which host (human or bat) the virus can infect, is much less conserved with the amino acid sequence identity being only 69%.

Figure 4 shows the sequence alignment of the Spike proteins from six β coronaviruses. Two are viruses isolated from the current pandemic (Wuhan-Hu-1, 2019-nCoV_USA-AZ1); two are the suspected template viruses (Bat_CoV_ZC45, Bat_CoV_ZXC21); two are SARS coronaviruses (SARS_GZ02, SARS). The RBM is highlighted in between two orange lines. Clearly, despite the high sequence identity for the overall genomes, the RBM of SARS-CoV-2 differs significantly from those of ZC45 and ZXC21. Intriguingly, the RBM of SARS-CoV-2 resembles, on a great deal, the RBM of SARS Spike. Although this is not an exact "copy and paste", careful examination of the Spike-hACE2 structures[37,38] reveals that all residues essential for either hACE2 binding or protein folding (orange sticks in Figure 3C and what is highlighted by red short lines in Figure 4) are "kept". Most of these essential residues are precisely preserved, including those involved in disulfide bond formation (C467, C474) and electrostatic interactions (R444, E452, R453, D454), which are pivotal for the structural integrity of the RBM (Figure 3C and 4). The few changes within the group of essential residues are almost exclusively hydrophobic "substitutions" (I428→L, L443→F, F460→Y, L472→F, Y484→Q), which should not affect either protein folding or the hACE2-interaction. At the same time, majority of the amino acid residues that are non-essential have "mutated" (Figure 4, RBM residues not labeled with short red lines). Judging from this sequence analysis alone, we were convinced early on that not only would the SARS-CoV-2 Spike protein bind hACE2 but also the binding would resemble, precisely, that between the original SARS Spike protein and hACE2[23]. Recent structural work has confirmed our prediction[39].

As elaborated below, the way that SARS-CoV-2 RBM resembles SARS-CoV RBM and the overall sequence conservation pattern between SARS-CoV-2 and ZC45/ZXC21 are highly unusual. Collectively, this suggests that portions of the SARS-CoV-2 genome have not been derived from natural quasi-species viral particle evolution.

If SARS-CoV-2 does indeed come from natural evolution, its RBM could have only been acquired in one of the two possible routes: 1) an ancient recombination event followed by convergent evolution or 2) a natural recombination event that occurred fairly recently.

In the first scenario, the ancestor of SARS-CoV-2, a ZC45/ZXC21-like bat coronavirus would have recombined and "swapped" its RBM with a coronavirus carrying a relatively "complete" RBM (in reference to SARS). This recombination would result in a novel ZC45/ZXC21-like coronavirus with all the gaps in its RBM "filled" (Figure 4). Subsequently, the virus would have to adapt extensively in its new host, where the ACE2 protein is highly homologous to hACE2. Random mutations across the genome would have to have occurred to eventually shape the RBM to its current form – resembling SARS-CoV RBM in a highly intelligent manner. However, this convergent evolution process would also result in the accumulation of a large amount of mutations in other parts of the genome, rendering the overall sequence identity relatively low. The high sequence identity between SARS-CoV-2 and ZC45/ZXC21 on various proteins (94-100% identity) do not support this scenario and, therefore, clearly indicates that SARS-CoV-2 carrying such an RBM cannot come from a ZC45/ZXC21-like bat coronavirus through this convergent evolutionary route.

In the second scenario, the ZC45/ZXC21-like coronavirus would have to have recently recombined and swapped its RBM with another coronavirus that had successfully adapted to bind an animal ACE2

highly homologous to hACE2. The likelihood of such an event depends, in part, on the general requirements of natural recombination: 1) that the two different viruses share significant sequence similarity; 2) that they must co-infect and be present in the same cell of the same animal; 3) that the recombinant virus would not be cleared by the host or make the host extinct; 4) that the recombinant virus eventually would have to become stable and transmissible within the host species.

In regard to this recent recombination scenario, the animal reservoir could not be bats because the ACE2 proteins in bats are not homologous enough to hACE2 and therefore the adaption would not be able to yield an RBM sequence as seen in SARS-CoV-2. This animal reservoir also could not be humans as the ZC45/ZXC21-like coronavirus would not be able to infect humans. In addition, there has been no evidence of any SARS-CoV-2 or SARS-CoV-2-like virus circulating in the human population prior to late 2019. Intriguingly, according to a recent bioinformatics study, SARS-CoV-2 was well-adapted for humans since the start of the outbreak[1].

Only one other possibility of natural evolution remains, which is that the ZC45/ZXC21-like virus and a coronavirus containing a SARS-like RBM could have recombined in an intermediate host where the ACE2 protein is homologous to hACE2. Several laboratories have reported that some of the Sunda pangolins smuggled into China from Malaysia carried coronaviruses, the receptor-binding domain (RBD) of which is almost identical to that of SARS-CoV-2[27-29,31]. They then went on to suggest that pangolins are the likely intermediate host for SARS-CoV-2[27-29,31]. However, recent independent reports have found significant flaws in this data[40-42]. Furthermore, contrary to these reports[27-29,31], no coronaviruses have been detected in Sunda pangolin samples collected for over a decade in Malaysia and Sabah between 2009 and 2019[43]. A recent study also showed that the RBD, which is shared between SARS-CoV-2 and the reported pangolin coronaviruses, binds to hACE2 ten times stronger than to the pangolin ACE2[2], further dismissing pangolins as the possible intermediate host. Finally, an *in silico* study, while echoing the notion that pangolins are not likely an intermediate host, also indicated that none of the animal ACE2 proteins examined in their study exhibited more favorable binding potential to the SARS-CoV-2 Spike protein than hACE2 did[3]. This last study virtually exempted all animals from their suspected roles as an intermediate host[3], which is consistent with the observation that SARS-CoV-2 was well-adapted for humans from the start of the outbreak[1]. This is significant because these findings collectively suggest that no intermediate host seems to exist for SARS-CoV-2, which at the very least diminishes the possibility of a recombinant event occurring in an intermediate host.

Even if we ignore the above evidence that no proper host exists for the recombination to take place and instead assume that such a host does exist, it is still highly unlikely that such a recombination event could occur in nature.

As we have described above, if natural recombination event is responsible for the appearance of SARS-CoV-2, then the ZC45/ZXC21-like virus and a coronavirus containing a SARS-like RBM would have to recombine in the same cell by swapping the S1/RBM, which is a rare form of recombination. Furthermore, since SARS has occurred only once in human history, it would be at least equally rare for nature to produce a virus that resembles SARS in such an intelligent manner – having an RBM that differs from the SARS RBM only at a few non-essential sites (Figure 4). The possibility that this unique SARS-like coronavirus would reside in the same cell with the ZC45/ZXC21-like ancestor virus and the two viruses would recombine in the "RBM-swapping" fashion is extremely low. Importantly, this, and the other recombination event described below in section 1.3 (even more impossible to occur in nature), would both have to happen to produce a Spike as seen in SARS-CoV-2.

While the above evidence and analyses together appear to disapprove a natural origin of SARS-CoV-2's RBM, abundant literature shows that gain-of-function research, where the Spike protein of a coronavirus was specifically engineered, has repeatedly led to the successful generation of human-infecting coronaviruses from coronaviruses of non-human origin[44-47].

Record also shows that research laboratories, for example, the Wuhan Institute of Virology (WIV), have successfully carried out such studies working with US researchers[45] and also working alone[47]. In addition, the WIV has engaged in decades-long coronavirus surveillance studies and therefore owns the world's largest collection of coronaviruses. Evidently, the technical barrier is non-existent for the WIV and other related laboratories to carry out and succeed in such Spike/RBM engineering and gain-of-function research.

Figure 5. Two restriction sites are present at either end of the RBM of SARS-CoV-2, providing convenience for replacing the RBM within the spike gene. *A. Nucleotide sequence of the RBM of SARS-CoV-2 (Wuhan-Hu-1). An EcoRI site is found at the 5'-end of the RBM and a BstEII site at the 3'-end. B. Although these two restriction sites do not exist in the original spike gene of ZC45, they can be conveniently introduced given that the sequence discrepancy is small (2 nucleotides) in either case. C. Amino acid sequence alignment with the RBM region highlighted (color and underscore). The RBM highlighted in orange (top) is what is defined by the EcoRI and BstEII sites in the SARS-CoV-2 (Wuhan-Hu-1) spike. The RBM highlighted in magenta (middle) is the region swapped by Dr. Fang Li and colleagues into a SARS Spike backbone[39]. The RBM highlighted in blue (bottom) is from the Spike protein (RBM: 424-494) of SARS-BJ01 (AY278488.2), which was swapped by the Shi lab into the Spike proteins of different bat coronaviruses replacing the corresponding segments[47].*

Strikingly, consistent with the RBM engineering theory, we have identified two unique restriction sites, EcoRI and BstEII, at either end of the *RBM* of the SARS-CoV-2 genome, respectively (Figure 5A). These two sites, which are popular choices of everyday molecular cloning, do not exist in the rest of this *spike* gene. This particular setting makes it extremely convenient to swap the *RBM* within *spike*, providing a quick way to test different RBMs and the corresponding Spike proteins.

Such EcoRI and BstEII sites do not exist in the *spike* genes of other β coronaviruses, which strongly indicates that they were unnatural and were specifically introduced into this *spike* gene of SARS-CoV-2 for the convenience of manipulating the critical RBM. Although ZC45 *spike* also does not have these two sites (Figure 5B), they can be introduced very easily as described in part 2 of this report.

It is noteworthy that introduction of the EcoRI site here would change the corresponding amino acids from -*WNT*- to -*WNS*- (Figure 5AB). As far as we know, all SARS and SARS-like bat coronaviruses exclusively carry a *T* (threonine) residue at this location. SARS-CoV-2 is the only exception in that this *T* has mutated to an *S* (serine), save the suspicious RaTG13 and pangolin coronaviruses published after the outbreak[48].

Once the restriction sites were successfully introduced, the *RBM* segment could be swapped conveniently using routine restriction enzyme digestion and ligation. Although alternative cloning techniques may leave no trace of genetic manipulation (Gibson assembly as one example), this old-fashioned approach could be chosen because it offers a great level of convenience in swapping this critical *RBM*.

Given that RBM fully dictates hACE2-binding and that the SARS RBM-hACE2 binding was fully characterized by high-resolution structures (Figure 3)[37,38], this RBM-only swap would not be any riskier than the full Spike swap. In fact, the feasibility of this RBM-swap strategy has been proven[39,47]. In 2008, Dr. Zhengli Shi's group swapped a SARS RBM into the Spike proteins of several SARS-like bat coronaviruses after introducing a restriction site into a codon-optimized *spike* gene (Figure 5C)[47]. They then validated the binding of the resulted chimeric Spike proteins with hACE2. Furthermore, in a recent publication, the RBM of SARS-CoV-2 was swapped into the receptor-binding domain (RBD) of SARS-CoV, resulting in a chimeric RBD fully functional in binding hACE2 (Figure 5C)[39]. Strikingly, in both cases, the manipulated RBM segments resemble almost exactly the RBM defined by the positions of the EcoRI and BstEII sites (Figure 5C). Although cloning details are lacking in both publications[39,47], it is conceivable that the actual restriction sites may vary depending on the *spike* gene receiving the RBM insertion as well as the convenience in introducing unique restriction site(s) in regions of interest. It is noteworthy that the corresponding author of this recent publication[39], Dr. Fang Li, has been an active collaborator of Dr. Zhengli Shi since 2010[49-53]. Dr. Li was the first person in the world to have structurally elucidated the binding between SARS-CoV RBD and hACE2[38] and has been the leading expert in the structural understanding of Spike-ACE2 interactions[38,39,53-56]. The striking finding of EcoRI and BstEII restriction sites at either end of the SARS-CoV-2 RBM, respectively, and the fact that the same RBM region has been swapped both by Dr. Shi and by her long-term collaborator, respectively, using restriction enzyme digestion methods are unlikely a coincidence. **Rather, it is the smoking gun proving that the RBM/Spike of SARS-CoV-2 is a product of genetic manipulation.**

Although it may be convenient to copy the exact sequence of SARS RBM, it would be too clear a sign of artificial design and manipulation. The more deceiving approach would be to change a few non-essential residues, while preserving the ones critical for binding. This design could be well-guided by the high-resolution structures (Figure 3)[37,38]. This way, when the overall sequence of the RBM would appear

to be more distinct from that of the SARS RBM, the hACE2-binding ability would be well-preserved. We believe that all of the crucial residues (residues labeled with red sticks in Figure 4, which are the same residues shown in sticks in Figure 3C) should have been "kept". As described earlier, while some should be direct preservation, some should have been switched to residues with similar properties, which would not disrupt hACE2-binding and may even strengthen the association further. Importantly, changes might have been made intentionally at non-essential sites, making it less like a "copy and paste" of the SARS RBM.

1.3 An unusual furin-cleavage site is present in the Spike protein of SARS-CoV-2 and is associated with the augmented virulence of the virus

Another unique motif in the Spike protein of SARS-CoV-2 is a polybasic furin-cleavage site located at the S1/S2 junction (Figure 4, segment in between two green lines). Such a site can be recognized and cleaved by the furin protease. Within the lineage B of β coronaviruses and with the exception of SARS-CoV-2, no viruses contain a furin-cleavage site at the S1/S2 junction (Figure 6)[57]. In contrast, furin-cleavage site at this location has been observed in other groups of coronaviruses[57,58]. Certain selective pressure seems to be in place that prevents the lineage B of β coronaviruses from acquiring or maintaining such a site in nature.

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Human SARS-CoV BJ01              655 - GICASYHTVSLL----RSTS - 670
Human SARS-CoV CUHK-W1           655 - GICASYHTVSLL----RSTS - 670
Human SARS-CoV Tor2              655 - GICASYHTVSLL----RSTS - 670
Human SARS-CoV Frankfurt-1       655 - GICASYHTVSLL----RSTS - 670
Human SARS-CoV Urbani            655 - GICASYHTVSLL----RSTS - 670
Civet SARS-CoV civet020          655 - GICASYHTVSSL----RSTS - 670
Civet SARS-CoV sz16              655 - GICASYHTVSSL----RSTS - 670
Racoon dog SARS-CoV A030         655 - GICASYHTVSSL----RSTS - 670
SARS-CoV-2                       669 - GICASYQTQTNSPRRARSVA - 688
Pangolin CoV MP789               n/a - GICASYQTQTNS----RSVS - n/a
Bat SARSr-CoV RaTG13             669 - GICASYQTQTNS----RSVA - 684
Bat SARSr-CoV LYRa11             659 - GICASYHTASLL----RNTD - 674
Bat SARSr-CoV LYRa3              659 - GICASYHTASLL----RNTG - 674
Bat SARSr-CoV RsSHC014           656 - GICASYHTVSSL----RSTS - 671
Bat SARSr-CoV Rs4084             656 - GICASYHTVSSL----RSTS - 671
Bat SARSr-CoV WIV1               656 - GICASYHTVSSL----RSTS - 671
Bat SARSr-CoV Rs3367             656 - GICASYHTVSSL----RSTS - 671
Bat SARSr-CoV Rs7327             656 - GICASYHTVSSL----RSTS - 671
Bat SARSr-CoV Rs9401             656 - GICASYHTVSSL----RSTS - 671
Bat SARSr-CoV Rs4231             655 - GICASYHTVSSL----RSTS - 670
Bat SARSr-CoV WIV16              655 - GICASYHTVSSL----RSTS - 670
Bat SARSr-CoV Rs4874             655 - GICASYHTVSSL----RSTS - 670
Bat SARSr-CoV ZC45               646 - GICASYHTASIL----RSTS - 661
Bat SARSr-CoV ZXC21              645 - GICASYHTASIL----RSTG - 660
Bat SARSr-CoV Rf4092             634 - GICASYHTASTL----RGVG - 649
Bat SARSr-CoV Rf/JL2012          636 - GICASYHTASLL----RSTG - 651
Bat SARSr-CoV JTMC15             636 - GICASYHTASLL----RSTG - 651
Bat SARSr-CoV 16BO133            636 - GICASYHTASLL----RSTG - 651
Bat SARSr-CoV B15-21             636 - GICASYHTASLL----RSTG - 651
Bat SARSr-CoV YN2013             633 - GICASYHTASTL----RSIG - 648
Bat SARSr-CoV Anlong-103         633 - GICASYHTASTL----RSVG - 648
Bat SARSr-CoV Rp/Shaanxi2011     640 - GICASYHTASVL----RSTG - 655
Bat SARSr-CoV Rs/HuB2013         641 - GICASYHTASVL----RSTG - 656
Bat SARSr-CoV YNLF/34C           641 - GICASYHTASVL----RSTG - 656
Bat SARSr-CoV YNLF/31C           641 - GICASYHTASVL----RSTG - 656
Bat SARSr-CoV Rf1                641 - GICASYHTASHL----RSTG - 656
Bat SARSr-CoV 273                641 - GICASYHTASHL----RSTG - 656
Bat SARSr-CoV Rf/SX2013          639 - GICASYHTASLL----RSTG - 654
Bat SARSr-CoV Rf/HeB2013         641 - GICASYHTASLL----RSTG - 656
Bat SARSr-CoV Cp/Yunnan2011      641 - GICASYHTASLL----RNTG - 656
Bat SARSr-CoV Rs672              641 - GICASYHTASTL----RSVG - 656
Bat SARSr-CoV Rs4255             641 - GICASYHTASTL----RSVG - 656
Bat SARSr-CoV 4081               641 - GICASYHTASTL----RSVG - 656
Bat SARSr-CoV Rm1                641 - GICASYHTASVL----RSTG - 656
Bat SARSr-CoV 279                641 - GICASYHTASVL----RSTG - 656
Bat SARSr-CoV Rs/GX2013          642 - GICASYHTASVL----RSTG - 657
Bat SARSr-CoV Rs806              641 - GICASYHTASLL----RSTG - 656
Bat SARSr-CoV HKU3-1             642 - GICASYHTASVL----RSTG - 657
Bat SARSr-CoV Longquan-140       642 - GICASYHTASVL----RSTG - 657
Bat SARSr-CoV Rp3                641 - GICASYHTASTL----RSVG - 656
Bat SARSr-CoV Rs4247             642 - GICASYHTASTL----RSVG - 657
Bat SARSr-CoV Rs4237             641 - GICASYHTASTL----RSVG - 656
Bat SARSr-CoV As6526             641 - GICASYHTASTL----RSVG - 656
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Figure 6. Furin-cleavage site found at the S1/S2 junction of Spike is unique to SARS-CoV-2 and absent in other lineage B β coronaviruses. *Figure reproduced from Hoffmann, et al[57].*

As previously described, during the cell entry process, the Spike protein is first cleaved at the S1/S2 junction. This step, and a subsequent cleavage downstream that exposes the fusion peptide, are both mediated by host proteases. The presence or absence of these proteases in different cell types greatly affects the cell tropism and presumably the pathogenicity of the viral infection. Unlike other proteases, furin protease is widely expressed in many types of cells and is present at multiple cellular and extracellular locations. Importantly, the introduction of a furin-cleavage site at the S1/S2 junction could significantly enhance the infectivity of a virus as well as greatly expand its cell tropism — a phenomenon well-documented in both influenza viruses and other coronaviruses[59-65].

If we leave aside the fact that no furin-cleavage site is found in any lineage B β coronavirus in nature and instead assume that this site in SARS-CoV-2 is a result of natural evolution, then only one evolutionary pathway is possible, which is that the furin-cleavage site has to be derived from a homologous recombination event. Specifically, an ancestor β coronavirus containing no furin-cleavage site would have to recombine with a closely related coronavirus that does contain a furin-cleavage site.

However, two facts disfavor this possibility. First, although some coronaviruses from other groups or lineages do contain polybasic furin-cleavage sites, none of them contains the exact polybasic sequence present in SARS-CoV-2 (-*PRRAR/SVA*-). Second, between SARS-CoV-2 and any coronavirus containing a legitimate furin-cleavage site, the sequence identity on Spike is no more than 40%[66]. Such a low level of sequence identity rules out the possibility of a successful homologous recombination ever occurring between the ancestors of these viruses. Therefore, the furin-cleavage site within the SARS-CoV-2 Spike protein is unlikely to be of natural origin and instead should be a result of laboratory modification.

Consistent with this claim, a close examination of the nucleotide sequence of the furin-cleavage site in SARS-CoV-2 *spike* has revealed that the two consecutive Arg residues within the inserted sequence (-PRRA-) are both coded by the rare codon CGG (least used codon for Arg in SARS-CoV-2) (Figure 7)[8]. In fact, this *CGGCGG* arrangement is the only instance found in the SARS-CoV-2 genome where this rare codon is used in tandem. This observation strongly suggests that this furin-cleavage site should be a result of genetic engineering. Adding to the suspicion, a *FauI* restriction site is formulated by the codon choices here, suggesting the possibility that the *restriction fragment length polymorphism,* a technique that a WIV lab is proficient at[67], could have been involved. There, the fragmentation pattern resulted from *FauI* digestion could be used to monitor the preservation of the furin-cleavage site in Spike as this furin-cleavage site is prone to deletions *in vitro*[68,69]. Specifically, RT-PCR on the *spike* gene of the recovered viruses from cell cultures or laboratory animals could be carried out, the product of which would be subjected to *FauI* digestion. Viruses retaining or losing the furin-cleavage site would then yield distinct patterns, allowing convenient tracking of the virus(es) of interest.

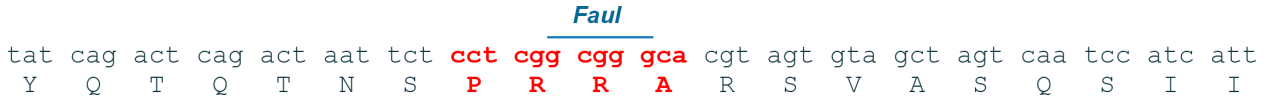

Figure 7. Two consecutive Arg residues in the -PRRA- insertion at the S1/S2 junction of SARS-CoV-2 Spike are both coded by a rare codon, CGG. *A FauI restriction site, 5'-(N)$_6$GCGGG-3', is embedded in the coding sequence of the "inserted" PRRA segment, which may be used as a marker to monitor the preservation of the introduced furin-cleavage site.*

In addition, although no known coronaviruses contain the exact sequence of -*PRRAR/SVA*- that is present in the SARS-CoV-2 Spike protein, a similar -*RRAR/AR*- sequence has been observed at the S1/S2 junction of the Spike protein in a rodent coronavirus, AcCoV-JC34, which was published by Dr. Zhengli

Shi in 2017[70]. It is evident that the legitimacy of -*RRAR*- as a functional furin-cleavage site has been known to the WIV experts since 2017.

The evidence collectively suggests that the furin-cleavage site in the SARS-CoV-2 Spike protein may not have come from nature and could be the result of genetic manipulation. The purpose of this manipulation could have been to assess any potential enhancement of the infectivity and pathogenicity of the laboratory-made coronavirus[59-64]. Indeed, recent studies have confirmed that the furin-cleavage site does confer significant pathogenic advantages to SARS-CoV-2[57,68].

1.4 Summary

Evidence presented in this part reveals that certain aspects of the SARS-CoV-2 genome are extremely difficult to reconcile to being a result of natural evolution. The alternative theory we suggest is that the virus may have been created by using ZC45/ZXC21 bat coronavirus(es) as the backbone and/or template. The Spike protein, especially the RBM within it, should have been artificially manipulated, upon which the virus has acquired the ability to bind hACE2 and infect humans. This is supported by the finding of a unique restriction enzyme digestion site at either end of the RBM. An unusual furin-cleavage site may have been introduced and inserted at the S1/S2 junction of the Spike protein, which contributes to the increased virulence and pathogenicity of the virus. These transformations have then staged the SARS-CoV-2 virus to eventually become a highly-transmissible, onset-hidden, lethal, sequelae-unclear, and massively disruptive pathogen.

Evidently, the possibility that SARS-CoV-2 could have been created through gain-of-function manipulations at the WIV is significant and should be investigated thoroughly and independently.

2. Delineation of a synthetic route of SARS-CoV-2

In the second part of this report, we describe a synthetic route of creating SARS-CoV-2 in a laboratory setting. It is postulated based on substantial literature support as well as genetic evidence present in the SARS-CoV-2 genome. Although steps presented herein should not be viewed as exactly those taken, we believe that key processes should not be much different. Importantly, our work here should serve as a demonstration of how SARS-CoV-2 can be designed and created conveniently in research laboratories by following proven concepts and using well-established techniques.

Importantly, research labs, both in Hong Kong and in mainland China, are leading the world in coronavirus research, both in terms of resources and on the research outputs. The latter is evidenced not only by the large number of publications that they have produced over the past two decades but also by their milestone achievements in the field: they were the first to identify civets as the intermediate host for SARS-CoV and isolated the first strain of the virus[71]; they were the first to uncover that SARS-CoV originated from bats[72,73]; they revealed for the first time the antibody-dependent enhancement (ADE) of SARS-CoV infections[74]; they have contributed significantly in understanding MERS in all domains (zoonosis, virology, and clinical studies)[75-79]; they made several breakthroughs in SARS-CoV-2 research[18,35,80]. Last but not least, they have the world's largest collection of coronaviruses (genomic sequences and live viruses). The knowledge, expertise, and resources are all readily available within the Hong Kong and mainland research laboratories (they collaborate extensively) to carry out and accomplish the work described below.

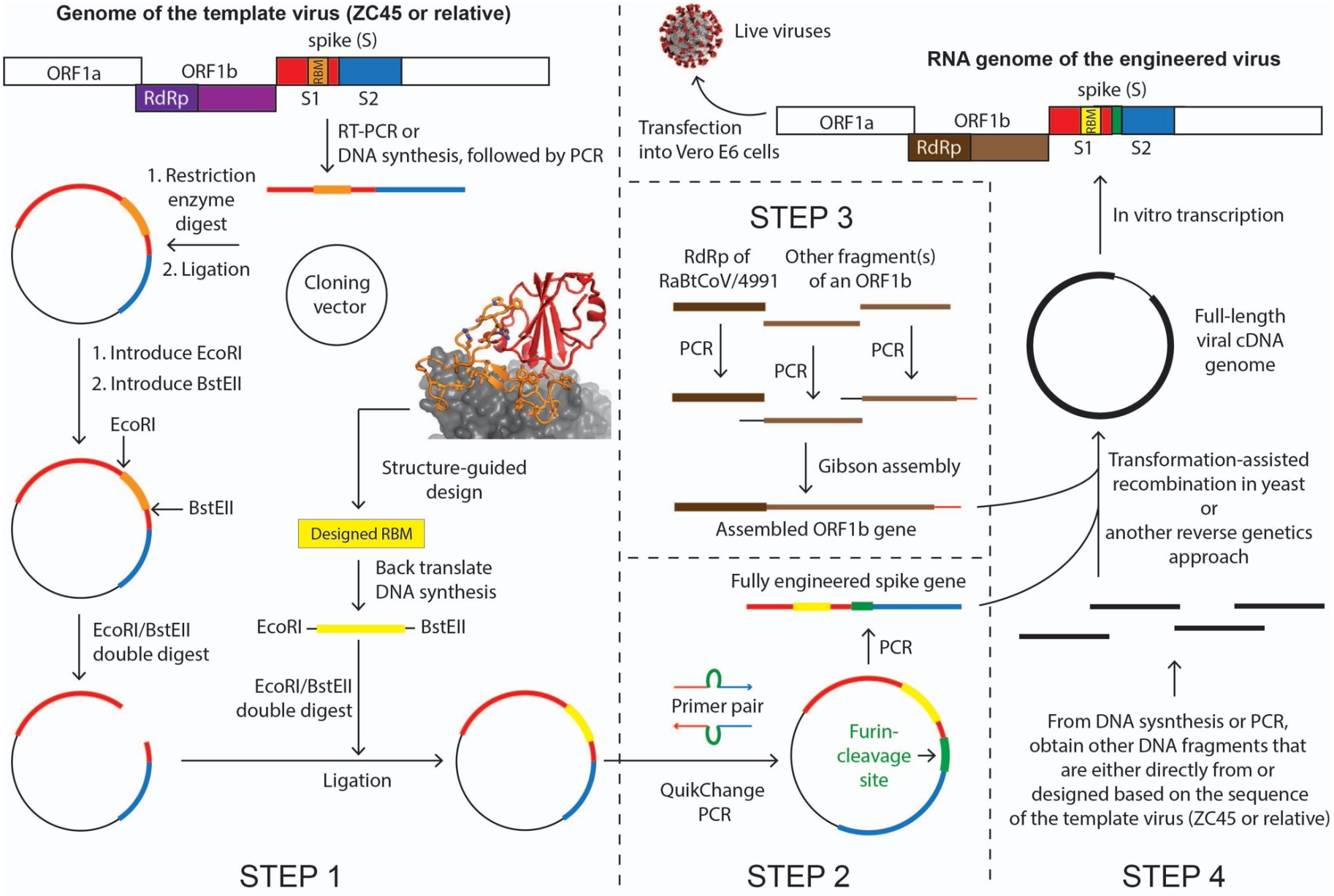

Figure 8. Diagram of a possible synthetic route of the laboratory-creation of SARS-CoV-2.

2.1 Possible scheme in designing the laboratory-creation of the novel coronavirus

In this sub-section, we outline the possible overall strategy and major considerations that may have been formulated at the designing stage of the project.

To engineer and create a human-targeting coronavirus, they would have to pick a bat coronavirus as the template/backbone. This can be conveniently done because many research labs have been actively collecting bat coronaviruses over the past two decades[32,33,70,72,81-85]. However, this template virus ideally should not be one from Dr. Zhengli Shi's collections, considering that she is widely known to have been engaged in gain-of-function studies on coronaviruses. Therefore, ZC45 and/or ZXC21, novel bat coronaviruses discovered and owned by military laboratories[33], would be suitable as the template/backbone. It is also possible that these military laboratories had discovered other closely related viruses from the same location and kept some unpublished. Therefore, the actual template could be ZC45, or ZXC21, or a close relative of them. The postulated pathway described below would be the same regardless of which one of the three was the actual template.

Once they have chosen a template virus, they would first need to engineer, through molecular cloning, the Spike protein so that it can bind hACE2. The concept and cloning techniques involved in this manipulation have been well-documented in the literature[44-46,84,86]. With almost no risk of failing, the template bat virus could then be converted to a coronavirus that can bind hACE2 and infect humans[44-46].

Second, they would use molecular cloning to introduce a furin-cleavage site at the S1/S2 junction of Spike. This manipulation, based on known knowledge[60,61,65], would likely produce a strain of coronavirus that is a more infectious and pathogenic.

Third, they would produce an *ORF1b* gene construct. The *ORF1b* gene encodes the polyprotein Orf1b, which is processed post-translationally to produce individual viral proteins: RNA-dependent RNA polymerase (RdRp), helicase, guanidine-N7 methyltransferase, uridylate-specific endoribonuclease, and 2'-O-methyltransferase. All of these proteins are parts of the replication machinery of the virus. Among them, the RdRp protein is the most crucial one and is highly conserved among coronaviruses. Importantly, Dr. Zhengli Shi's laboratory uses a PCR protocol, which amplifies a particular fragment of the *RdRp* gene, as their primary method to detect the presence of coronaviruses in raw samples (bat fecal swap, feces, etc). As a result of this practice, the Shi group has documented the sequence information of this short segment of *RdRp* for all coronaviruses that they have successfully detected and/or collected.

Here, the genetic manipulation is less demanding or complicated because Orf1b is conserved and likely Orf1b from any β coronavirus would be competent enough to do the work. However, we believe that they would want to introduce a particular Orf1b into the virus for one of the two possible reasons:

1. Since many phylogenetic analyses categorize coronaviruses based on the sequence similarity of the *RdRp* gene only[18,31,35,83,87], having a different *RdRp* in the genome therefore could ensure that SARS-CoV-2 and ZC45/ZXC21 are separated into different groups/sub-lineages in phylogenetic studies. Choosing an *RdRp* gene, however, is convenient because the short *RdRp* segment sequence has been recorded for all coronaviruses ever collected/detected. Their final choice was the *RdRp* sequence from bat coronavirus RaBtCoV/4991, which was discovered in 2013. For RaBtCoV/4991, the only information ever published was the sequence of its short *RdRp* segment[83], while neither its full genomic sequence nor virus isolation were ever reported. After amplifying the *RdRp* segment (or the whole *ORF1b* gene) of RaBatCoV/4991, they would have then used it for subsequent assembly and creation of the genome of SARS-CoV-2. Small changes in the *RdRp*

sequence could either be introduced at the beginning (through DNA synthesis) or be generated *via* passages later on. On a separate track, when they were engaged in the fabrication of the RaTG13 sequence, they could have started with the short *RdRp* segment of RaBtCoV/4991 without introducing any changes to its sequence, resulting in a 100% nucleotide sequence identity between the two viruses on this short *RdRp* segment[83]. This RaTG13 virus could then be claimed to have been discovered back in 2013.

2. The RdRp protein from RaBatCoV/4991 is unique in that it is superior than RdRp from any other β coronavirus for developing antiviral drugs. RdRp has no homologs in human cells, which makes this essential viral enzyme a highly desirable target for antiviral development. As an example, *Remedesivir*, which is currently undergoing clinical trials, targets RdRp. When creating a novel and human-targeting virus, they would be interested in developing the antidote as well. Even though drug discovery like this may not be easily achieved, it is reasonable for them to intentionally incorporate a RdRp that is more amenable for antiviral drug development.

Fourth, they would use reverse genetics to assemble the gene fragments of *spike*, *ORF1b*, and the rest of the template ZC45 into a cDNA version of the viral genome. They would then carry out *in vitro* transcription to obtain the viral RNA genome. Transfection of the RNA genome into cells would allow the recovery of live and infectious viruses with the desired artificial genome.

Fifth, they would carry out characterization and optimization of the virus strain(s) to improve the fitness, infectivity, and overall adaptation using serial passage *in vivo*. One or several viral strains that meet certain criteria would then be obtained as the final product(s).

2.2 A postulated synthetic route for the creation of SARS-CoV-2

In this sub-section, we describe in more details how each step could be carried out in a laboratory setting using available materials and routine molecular, cellular, and virologic techniques. A diagram of this process is shown in Figure 8. We estimate that the whole process could be completed in approximately 6 months.

Step 1: Engineering the RBM of the Spike for hACE2-binding (1.5 months)

The Spike protein of a bat coronavirus is either incapable of or inefficient in binding hACE2 due to the missing of important residues within its RBM. This can be exemplified by the RBM of the template virus ZC45 (Figure 4). The first and most critical step in the creation of SARS-CoV-2 is to engineer the Spike so that it acquires the ability to bind hACE2. As evidenced in the literature, such manipulations have been carried out repeatedly in research laboratories since 2008[44], which successfully yielded engineered coronaviruses with the ability to infect human cells[44-46,88,89]. Although there are many possible ways that one can engineer the Spike protein, we believe that what was actually undertaken was that they replaced the original RBM with a designed and possibly optimized RBM using SARS' RBM as a guide. As described in part 1, this theory is supported by our observation that two unique restriction sites, EcoRI and BstEII, exist at either end of the *RBM* in the SARS-CoV-2 genome (Figure 5A) and by the fact that such RBM-swap has been successfully carried out by Dr. Zhengli Shi and by her long-term collaborator and structure biology expert, Dr. Fang Li[39,47].

Although ZC45 *spike* does not contain these two restriction sites (Figure 5B), they can be introduced very easily. The original *spike* gene would be either amplified with RT-PCR or obtained through DNA synthesis (some changes could be safely introduced to certain variable regions of the sequence) followed by PCR. The gene would then be cloned into a plasmid using restriction sites other than EcoRI and BstEII.

Once in the plasmid, the *spike* gene can be modified easily. First, an EcoRI site can be introduced by converting the highlighted "gaacac" sequence (Figure 5B) to the desired "gaattc" (Figure 5A). The difference between them are two consecutive nucleotides. Using the commercially available QuikChange Site-Directed Mutagenesis kit, such a di-nucleotide mutation can be generated in no more than one week. Subsequently, the BstEII site could be similarly introduced at the other end of the *RBM*. Specifically, the "gaatacc" sequence (Figure 5B) would be converted to the desired "ggttacc" (Figure 5A), which would similarly require a week of time.

Once these restriction sites, which are unique within the *spike* gene of SARS-CoV-2, were successfully introduced, different *RBM* segments could be swapped in conveniently and the resulting Spike protein subsequently evaluated using established assays.

As described in part 1, the design of an RBM segment could be well-guided by the high-resolution structures (Figure 3)[37,38], yielding a sequence that resembles the SARS RBM in an intelligent manner. When carrying out the structure-guided design of the RBM, they would have followed the routine and generated a few (for example a dozen) such RBMs with the hope that some specific variant(s) may be superior than others in binding hACE2. Once the design was finished, they could have each of the designed *RBM* genes commercially synthesized (quick and very affordable) with an EcoRI site at the 5'-end and a BstEII site at the 3'-end. These novel *RBM* genes could then be cloned into the *spike* gene, respectively. The gene synthesis and subsequent cloning, which could be done in a batch mode for the small library of designed RBMs, would take approximately one month.

These engineered Spike proteins might then be tested for hACE2-binding using the established pseudotype virus infection assays[45,49,50]. The engineered Spike with good to exceptional binding affinities would be selected. (Although not necessary, directed evolution could be involved here (error-prone PCR on the *RBM* gene), coupled with either an *in vitro* binding assay[39,90] or a pseudotype virus infection assay[45,49,50], to obtain an RBM that binds hACE2 with exceptional affinity.)

Given the abundance of literature on Spike engineering[44-46,84,86] and the available high-resolution structures of the Spike-hACE2 complex[37,38], the success of this step would be very much guaranteed. By the end of this step, as desired, a novel *spike* gene would be obtained, which encodes a novel Spike protein capable of binding hACE2 with high affinity.

Step 2: Engineering a furin-cleavage site at the S1/S2 junction (0.5 month)

The product from Step 1, a plasmid containing the engineered *spike*, would be further modified to include a furin-cleavage site (segment indicated by green lines in Figure 4) at the S1/S2 junction. This short stretch of gene sequence can be conveniently inserted using several routine cloning techniques, including QuikChange Site-Directed PCR[60], overlap PCR followed by restriction enzyme digestion and ligation[91], or Gibson assembly. None of these techniques would leave any trace in the sequence. Whichever cloning method was the choice, the inserted gene piece would be included in the primers, which would be designed, synthesized, and used in the cloning. This step, leading to a further modified Spike with the furin-cleavage site added at the S1/S2 junction, could be completed in no more than two weeks.

Step 3: Obtain an *ORF1b* gene that contains the sequence of the short *RdRp* segment from RaBtCoV/4991 (1 month, yet can be carried out concurrently with Steps 1 and 2)

Unlike the engineering of Spike, no complicated design is needed here, except that the *RdRp* gene segment from RaBtCoV/4991 would need to be included. Gibson assembly could have been used here. In this technique, several fragments, each adjacent pair sharing 20-40 bp overlap, are combined together in one simple reaction to assemble a long DNA product. Two or three fragments, each covering a significant section of the *ORF1b* gene, would be selected based on known bat coronavirus sequences. One of these fragments would be the *RdRp* segment of RaBtCoV/4991[83]. Each fragment would be PCR amplified with proper overlap regions introduced in the primers. Finally, all purified fragments would be pooled in equimolar concentrations and added to the Gibson reaction mixture, which, after a short incubation, would yield the desired *ORF1b* gene in whole.

Step 4: Produce the designed viral genome using reverse genetics and recover live viruses (0.5 month)

Reverse genetics have been frequently used in assembling whole viral genomes, including coronavirus genomes[67,92-96]. The most recent example is the reconstruction of the SARS-CoV-2 genome using the *transformation-assisted recombination in yeast*[97]. Using this method, the Swiss group assembled the entire viral genome and produced live viruses in just one week[97]. This efficient technique, which would not leave any trace of artificial manipulation in the created viral genome, has been available since 2017[98,99]. In addition to the engineered *spike* gene (from steps 1 and 2) and the *ORF1b* gene (from step 3), other fragments covering the rest of the genome would be obtained either through RT-PCR amplification from the template virus or through DNA synthesis by following a sequence slightly altered from that of the template virus. We believe that the latter approach was more likely as it would allow sequence changes introduced into the variable regions of less conserved proteins, the process of which could be easily guided by multiple sequence alignments. The amino acid sequences of more conserved functions, such as that of the E protein, might have been left unchanged. All DNA fragments would then be pooled together and transformed into yeast, where the cDNA version of the SARS-CoV-2 genome would be assembled *via* transformation-assisted recombination. Of course, an alternative method of reverse genetics, one of which the WIV has successfully used in the past[67], could also be employed[67,92-96,100]. Although some earlier reverse genetics approaches may leave restriction sites at where different fragments would be joined, these traces would be hard to detect as the exact site of ligation can be anywhere in the ~30kb genome. Either way, a cDNA version of the viral genome would be obtained from the reverse genetics experiment. Subsequently, *in vitro* transcription using the cDNA as the template would yield the viral RNA genome, which upon transfection into Vero E6 cells would allow the production of live viruses bearing all of the designed properties.

Step 5: Optimize the virus for fitness and improve its hACE2-binding affinity *in vivo* (2.5-3 months)

Virus recovered from step 4 needs to be further adapted undergoing the classic experiment – serial passage in laboratory animals[101]. This final step would validate the virus' fitness and ensure its receptor-oriented adaptation toward its intended host, which, according to the analyses above, should be human. Importantly, the RBM and the furin-cleavage site, which were introduced into the Spike protein separately, would now be optimized together as one functional unit. Among various available animal models (e.g. mice, hamsters, ferrets, and monkeys) for coronaviruses, hACE2 transgenic mice (hACE2-mice) should be the most proper and convenient choice here. This animal model has been established during the study of SARS-CoV and has been available in the Jackson Laboratory for many years[102-104].

The procedure of serial passage is straightforward. Briefly, the selected viral strain from step 4, a precursor of SARS-CoV-2, would be intranasally inoculated into a group of anaesthetized hACE2-mice. Around 2-3 days post infection, the virus in lungs would usually amplify to a peak titer. The mice would

then be sacrificed and the lungs homogenized. Usually, the mouse-lung supernatant, which carries the highest viral load, would be used to extract the candidate virus for the next round of passage. After approximately 10~15 rounds of passage, the hACE2-binding affinity, the infection efficiency, and the lethality of the viral strain would be sufficiently enhanced and the viral genome stabilized[101]. Finally, after a series of characterization experiments (e.g. viral kinetics assay, antibodies response assay, symptom observation and pathology examination), the final product, SARS-CoV-2, would be obtained, concluding the whole creation process. From this point on, this viral pathogen could be amplified (most probably using Vero E6 cells) and produced routinely.

It is noteworthy that, based on the work done on SARS-CoV, the hACE2-mice, although suitable for SARS-CoV-2 adaptation, is not a good model to reflect the virus' transmissibility and associated clinical symptoms in humans. We believe that those scientists might not have used a proper animal model (such as the golden Syrian hamster) for testing the transmissibility of SARS-CoV-2 before the outbreak of COVID-19. If they had done this experiment with a proper animal model, the highly contagious nature of SARS-CoV-2 would be extremely evident and consequently SARS-CoV-2 would not have been described as "not causing human-to-human transmission" at the start of the outbreak.

We also speculate that the extensive laboratory-adaptation, which is oriented toward enhanced transmissibility and lethality, may have driven the virus too far. As a result, SARS-CoV-2 might have lost the capacity to attenuate on both transmissibility and lethality during its current adaptation in the human population. This hypothesis is consistent with the lack of apparent attenuation of SARS-CoV-2 so far despite its great prevalence and with the observation that a recently emerged, predominant variant only shows improved transmissibility[105-108].

Serial passage is a quick and intensive process, where the adaptation of the virus is accelerated. Although intended to mimic natural evolution, serial passage is much more limited in both time and scale. As a result, less random mutations would be expected in serial passage than in natural evolution. This is particularly true for conserved viral proteins, such as the E protein. Critical in viral replication, the E protein is a determinant of virulence and engineering of it may render SARS-CoV-2 attenuated[109-111] Therefore, at the initial assembly stage, these scientists might have decided to keep the amino acid sequence of the E protein unchanged from that of ZC45/ZXC21. Due to the conserved nature of the E protein and the limitations of serial passage, no amino acid mutation actually occurred, resulting in a 100% sequence identity on the E protein between SARS-CoV-2 and ZC45/ZXC21. The same could have happened to the marks of molecular cloning (restriction sites flanking the RBM). Serial passage, which should have partially naturalized the SARS-CoV-2 genome, might not have removed all signs of artificial manipulation.

3. Final remarks

Many questions remain unanswered about the origin of SARS-CoV-2. Prominent virologists have implicated in a *Nature Medicine* letter that laboratory escape, while not being entirely ruled out, was unlikely and that no sign of genetic manipulation is present in the SARS-CoV-2 genome[4]. However, here we show that genetic evidence within the *spike* gene of SARS-CoV-2 genome (restriction sites flanking the *RBM*; tandem rare codons used at the inserted furin-cleavage site) does exist and suggests that the SARS-CoV-2 genome should be a product of genetic manipulation. Furthermore, the proven concepts, well-established techniques, and knowledge and expertise are all in place for the convenient creation of this novel coronavirus in a short period of time.

Motives aside, the following facts about SARS-CoV-2 are well-supported:

1. If it was a laboratory product, the most critical element in its creation, the backbone/template virus (ZC45/ZXC21), is owned by military research laboratories.
2. The genome sequence of SARS-CoV-2 has likely undergone genetic engineering, through which the virus has gained the ability to target humans with enhanced virulence and infectivity.
3. The characteristics and pathogenic effects of SARS-CoV-2 are unprecedented. The virus is highly transmissible, onset-hidden, multi-organ targeting, sequelae-unclear, lethal, and associated with various symptoms and complications.
4. SARS-CoV-2 caused a world-wide pandemic, taking hundreds of thousands of lives and shutting down the global economy. It has a destructive power like no other.

Judging from the evidence that we and others have gathered, we believe that finding the origin of SARS-CoV-2 should involve an independent audit of the WIV P4 laboratories and the laboratories of their close collaborators. Such an investigation should have taken place long ago and should not be delayed any further.

We also note that in the publication of the chimeric virus SHC015-MA15 in 2015, the attribution of funding of Zhengli Shi by the NIAID was initially left out. It was reinstated in the publication in 2016 in a corrigendum, perhaps after the meeting in January 2016 to reinstate NIH funding for gain-of-function research on viruses. This is an unusual scientific behavior, which needs an explanation for.

What is not thoroughly described in this report is the various evidence indicating that several coronaviruses recently published (RaTG13[18], RmYN02[30], and several pangolin coronaviruses[27-29,31]) are highly suspicious and likely fraudulent. These fabrications would serve no purpose other than to deceive the scientific community and the general public so that the true identity of SARS-CoV-2 is hidden. Although exclusion of details of such evidence does not alter the conclusion of the current report, we do believe that these details would provide additional support for our contention that SARS-CoV-2 is a laboratory-enhanced virus and a product of gain-of-function research. A follow-up report focusing on such additional evidence is now being prepared and will be submitted shortly.

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The COVID pandemic has been a topic that very few doctors would like to discuss, and for good reason. The handling of COVID, personal protective equipment (PPE) use, mandated vaccines, and systemic response were and remain deeply flawed and lack scientific explanation.

PPE has been utilized at great cost[1] and has had very little impact on the transmission of COVID[2]. It stands to reason that clothe face masks and medical masks alike have not stopped transmission at all, one reason being the porous nature of these materials is unlikely to trap a particle as small as the virus[3]. Inversely, the mask likely serves to trap larger particles, such as bacteria, creating an infectious concern. Masks are removed multiple times a day, placed in pockets or on surfaces, and worn throughout multiple locations. These are only several of the misuse of PPE witnessed by nearly every medical professional, patient, and associated healthcare worker. One would be hard pressed to find anyone who has never carried out any of these actions. This indeed increases the likelihood that the masks become a petri dish of germs, so to speak. Furthermore, masking inhibits the natural inhalation and exhalation of air, thus inhibiting the mucociliary escalator of the respiratory system from doing its job: expelling particles that irritate the respiratory tract[4] and inducing the production of IgA[5], which ultimately enhances the body's natural immunity. The masking of patients with respiratory problems or disabilities certainly worsened those conditions, and the masking of children led to predictable side effects and long-term neurological and psychological issues including, but not limited to:

I. Speech pathology
    i. Masks muffle the voice, the inability to hear correctly leads to language delay[6]
II. Developmental and social delay
    i. Facial recognition and the response to facial features and associated emotions manifested by physical expression are paramount to social development[7]
III. Decreased natural immune response
    i. Children have a robust immune system that requires exposure to common pathogens in everyday life to develop long term immunity[8], masking likely served to decrease exposure to the natural microbiome of their environment

I have, in my possession, text messages between medical personnel speaking about sharing PPE for the purposes of FIT testing. This is obviously an incorrect and dangerous use of PPE. However, these actions occur consistently, which offers a massive inconsistency for us to resolve. Furthermore, when should an individual wear a mask? The guideline is consistently changing[9]. Take into account each scenario; when one sits at the desk, eats a meal, uses the restroom, walks the wards, is closer than 6 feet to another (and by extension should we be concerned it that individual has recently been exposed to COVID, do you currently have COVID, who have they disclosed their status to, and was the disclosure

---

[1] https://www.mcknights.com/news/analysis-ppe-costs-increase-over-1000-during-covid-19-crisis/
[2] https://reason.com/2022/02/07/that-study-of-face-masks-does-not-show-what-the-cdc-claims/
[3] https://www.aerosol.mech.ubc.ca/what-size-particle-is-important-to-transmission/
[4] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5378048/
[5] https://www.ncbi.nlm.nih.gov/books/NBK551516/
[6] https://www.asha.org/public/hearing/Effects-of-Hearing-Loss-on-Development/
[7] https://www.ncbi.nlm.nih.gov/books/NBK534819/
[8] https://www.aier.org/article/why-is-there-such-reluctance-to-discuss-natural-immunity/
[9] https://www.latimes.com/science/story/2021-07-27/timeline-cdc-mask-guidance-during-covid-19-pandemic

NOTARY PUBLIC STATE OF OHIO

SUE ZANN JOHNSON
Notary Public, State of Ohio
My Comm. Expires Sept. 27, 2027
Recorded in Wayne County

On 17th of February 2023
ANDREW ZYWIEC, appeared before me
provided identification and ANDREW
signed above. Sue Zann Johnson ZYWIEC
Notary Public

rD

appropriate, how were they tested, was the test carried out correctly, and was the test accurate, and if so how was the accuracy determined?) should one wear a mask, and which mask. One could never possibly assume that all of this information was or could be assessed in real time, and thusly, it remains inappropriate.

Mandated vaccinations were coerced, rather than consented to. If a physician cannot accurately state the risks and benefits, the side effect profile, and research to inform the patient, not to mention and entire vaccine packet, one cannot be informed of the consent they are giving, as the physician is no informing the patient. This is rather forced or coerced consent. Thousands were threatened with the loss of their job or their livelihood, unless of course they complied with a vaccine mandate that was unconstitutional[10], poorly researched, did not go through appropriate clinical trials[11], and was not even well understood enough to present odds ratio, number needed to treat, number needed to harm, or virtually any useful statistical measure. Instead, the most concerning side effects are on Pfizer's web site buried in a section without any statistics at all. New research (and anecdotal evidence of many doctors and patients) proves that molecular mimicry to healthy human tissue[12], increased clotting profiles[13], and even neurological damage[14] has occurred secondary to the COVID19 vaccines. From a scientific standpoint, as a medical doctor, it appears that there is no evidence to support how the COVID pandemic was handled or continues to be handled.

https://www.mcknights.com/news/analysis-ppe-costs-increase-over-1000-during-covid-19-crisis/
[2] https://reason.com/2022/02/07/that-study-of-face-masks-does-not-show-what-the-cdc-claims/
[3] https://www.aerosol.mech.ubc.ca/what-size-particle-is-important-to-transmission/
[4] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5378048/
[5] https://www.ncbi.nlm.nih.gov/books/NBK551516/
[6] https://www.asha.org/public/hearing/Effects-of-Hearing-Loss-on-Development/
[7] https://www.ncbi.nlm.nih.gov/books/NBK534819/
[8] https://www.aier.org/article/why-is-there-such-reluctance-to-discuss-natural-immunity/
9https://www.latimes.com/science/story/2021-07-27/timeline-cdc-mask-guidance-during-covid-19-pandemic

[10]https://www.swfinstitute.org/news/90658/supreme-court-rules-biden-vaccine-mandate-for-businesses-is-unconstitutional
[11] https://www.smartsheet.com/content/clinical-trial-phases
[12] https://pubmed.ncbi.nlm.nih.gov/33610750/
[13] https://pubmed.ncbi.nlm.nih.gov/35582622/
[14] https://www.bmj.com/content/374/bmj.n1786/rr-0

On 17th of February 2023, ANDREW ZYWIEC, appeared before me, provided identification ANDREW ZYWIEC and signed above. Sue Zann Johnson Notary Public

[10] https://www.swfinstitute.org/news/90658/supreme-court-rules-biden-vaccine-mandate-for-businesses-is-unconstitutional
[11] https://www.smartsheet.com/content/clinical-trial-phases
[12] https://pubmed.ncbi.nlm.nih.gov/33610750/
[13] https://pubmed.ncbi.nlm.nih.gov/35582622/
[14] https://www.bmj.com/content/374/bmj.n1786/rr-0

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In this paper, and in research of the same, they used a dual plasmid co-expression system to transfect viral RNA genetics (HIV, HCV, SARS CoV 1-2-3, H5N1, and more), transform those genetics into *E. coli* induction systems, along with tRNA, mutase, reverse transcriptase, and genetic scaffolding to create a chimeric, self-assembling virus that can be reverse transcribed into the host genome and translated at will. In additional research, they have added prion proteins that cause psychotic encephalopathy and MS2 bacteriophage proteins that armor the RNA and make it virtually impossible for the immune system to degrade. The recently coined the term "armored RNA" for use in multiplex PCR diagnostics, as well as "directed evolution" under the guise of preventative care, is a fallacy. This research is unethical and likely has lead to grave dangers and possibly the death of millions based on the COVID19 "pandemic." Article cited below. https://pubmed.ncbi.nlm.nih.gov/9817878/

Andrew Zywiec, MD

On 17th of February 2023, ANDREW ZYWIEC, appeared before me, provided identification and signed above.

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Armored RNA Technology for Production of Ribonuclease-Resistant Viral RNA Controls and Standards

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The widespread use of sensitive assays for the detection of viral and cellular RNA sequences has created a need for stable, well-characterized controls and standards. We describe the development of a versatile, novel system for creating RNase-resistant RNA. "Armored RNA" is a complex of MS2 bacteriophage coat protein and RNA produced in *Escherichia coli* by the induction of an expression plasmid that encodes the coat protein and an RNA standard sequence. The RNA sequences are completely protected from RNase digestion within the bacteriophage-like complexes. As a prototype, a 172-base consensus sequence from a portion of the human immunodeficiency virus type 1 (HIV-1) *gag* gene was synthesized and cloned into the packaging vector used to produce the bacteriophage-like particles. After production and purification, the resulting HIV-1 Armored RNA particles were shown to be resistant to degradation in human plasma and produced reproducible results in the Amplicor HIV-1 Monitor assay for 180 days when stored at −20°C or for 60 days at 4°C. Additionally, Armored RNA preparations are homogeneous and noninfectious.

In recent years, a variety of techniques for measurement of the absolute concentration of specific RNA sequences have been developed, such as competitive reverse transcription-PCR (RT-PCR), nucleic acid based-sequence amplification, transcription-mediated amplification, and the branched-chain DNA assays (3, 6, 10, 14). These methods are used clinically to measure human immunodeficiency virus (HIV) type 1 (HIV-1) and hepatitis C virus (HCV) concentrations in the plasma of infected patients.

Central to these quantitative assays are reliable RNA preparations which are calibrated to known concentrations. The RNA may serve as (i) a positive "control" to indicate that the assay is performing to its specifications and (ii) a quantitative "standard" by which the samples are measured.

Currently, quantitative RNA standards are produced enzymatically by transcribing a DNA template into RNA by in vitro transcription (7). The positive controls comprised an attenuated or inactivated infectious agent itself or an in vitro-transcribed RNA. A major disadvantage of using a naked RNA is that it is susceptible to degradation by RNases. Because of the prevalence of RNases, the synthesis, purification, and storage of RNA are not trivial. Even if a specific lot of RNA is RNase free, it is susceptible to contamination any time that the storage vessel is opened. For these reasons, there is a need for RNase-resistant RNA controls and standards which are compatible with all of the technologies used to perform viral assays.

RNA coliphages are simple bacteriophages which infect *Escherichia coli* (for reviews, see references 12 and 16). The genomic RNA packaged within these particles is highly resistant to RNase digestion, and the RNA is easily extracted from the bacteriophage coat protein by conventional methods (1). We reasoned that a recombinant RNA (reRNA) containing the RNA sequence of an infectious agent such as HIV or HCV could be packaged as bacteriophage particles, thereby conferring protection to the reRNA against RNases.

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In this article, we describe a method for packaging reRNA into pseudoviral particles. Using "Armored RNA" technology, we have made a positive control compatible with a commercially available HIV-1 diagnostic assay, the Amplicor HIV-1 Monitor assay, and demonstrated that the reRNA in the Armored RNA particles was totally resistant to RNases, even when the particles were stored in human plasma for half of a year. As well, the HIV-1 Armored RNA substituted seamlessly in routine clinical runs for the positive control RNA standard provided with the HIV-1 Monitor kit. A straightforward manufacturing process and reliable performance make this technology ideal for the production of the RNA controls and standards for clinical diagnostics.

MATERIALS AND METHODS

Armored RNA construction. The details of the synthesis of the packaging vector and the expression and purification of the bacteriophage-like particles have been described previously (5). The AR-QS Armored RNA contains the 142-nucleotide RNA sequence which acts as the internal quantification standard (QS) in the HIV Monitor kit (5).

AR–HIV-B is an HIV-1-positive control standard. Briefly, a consensus 172-bp DNA fragment (Fig. 1) containing a portion of the HIV subtype B (HIV-B) *gag*, nucleotides 903 to 1074 (9), was designed from the analysis of 32 individual *gag* sequences contained within the *Human Retroviruses and AIDS 1996* nucleotide sequence database (9a). The HIV-B consensus sequence includes the 142-nucleotide *gag* sequence that serves as the target for the Amplicor HIV-1 Monitor assay with primers SK462 and SK431 (8). De novo construction of the HIV-B consensus *gag* fragment was performed with polyacrylamide gel electrophoresis-purified oligodeoxynucleotides and by a ligase chain reaction developed for synthetic gene construction (13). The synthetic DNA was amplified by the overlap extension technique to add on an MS2 operator sequence and was then cloned into the packaging vector to produce pAR–HIV-B. This recombinant plasmid was used to synthesize AR–HIV-B.

CsCl fractionation. Approximately 5 to 10 mg of Armored RNA was fractionated for each CsCl gradient. To compare the densities of MS2 and AR–HIV-B, each was loaded in separate gradients. After ultracentrifugation (5), the heat-sealed tube was stabilized in the upright position. An 18-gauge needle was inserted into the top of the tube to equilibrate the pressure in the tube. An 18-gauge needle was slowly inserted into the bottom of the tube, and 0.5-ml fractions were collected.

RT-PCR assay. To determine viral copy number, Amplicor HIV-1 Monitor assays (Roche Diagnostic Systems, Inc., Branchburg, N.J.) were performed according to the manufacturer's instructions.

Incubations with purified nucleases. The RNases were present in the reaction mixtures as a mixture of RNases A and T1 at 0.03 and 1.3 U/μl, respectively, and DNase I (Ambion, Inc., Austin, Tex.) was present in the reaction mixtures at 0.1

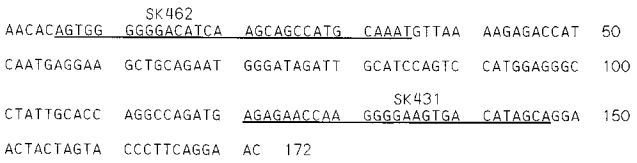

FIG. 1. Sequence of the HIV RNA packaged within AR–HIV-B. The sequences with which the primers SK462 and SK431 from the HIV-1 Monitor kit hybridize are indicated.

U/μl. The reaction mixtures were incubated at 37°C for 60 min. The concentrations of the plasmid DNA (pTRIamp19; Ambion, Inc.), the reRNA isolated from AR–HIV-B, and the intact AR–HIV-B were 0.03, 0.04, and 0.03 mg/ml, respectively. After digestion, the samples were fractionated in a 2% agarose gel, stained with ethidium bromide, and visualized by UV fluorescence.

Stability in plasma and serum. Purified AR–HIV-B was quantified in duplicate by the HIV-1 Monitor assay. Normal plasma from a single donor containing EDTA as the anticoagulant was clarified by centrifugation at 5,000 × *g* for 30 min, and sodium azide was added to a concentration of 0.1%. For each study, a single batch of AR–HIV-B spiked into plasma was prepared and aliquoted into single-time-point samples of 0.2 ml, the volume required for the HIV-1 Monitor assay. Samples were incubated at the assigned temperature until they were assayed. For the studies performed at −20°C, the Armored RNA control was assayed in parallel with the HIV-1 Monitor assay high-positive control in regular clinical runs for HIV-1 load comparison. The Armored RNA control and the HIV-1 Monitor assay positive control were assayed two to four times per week. The HIV-1 Monitor assay positive control was used according to the manufacturer's instructions.

For the study performed at 4°C, AR–HIV-B-spiked plasma samples were removed at each time point and were stored at −80°C, and then all of the samples were assayed in a single run.

Coincubations of Armored RNA and HIV in plasma. An attenuated HIV-1 strain, HIV-1_{MC99} (2), and AR-QS were both added to normal human plasma (Roche Diagnostic Systems, Inc.) at approximately 7,500 and 5,000 copies/ml, respectively. Aliquots of 0.2 ml were incubated at 37°C over 30 days. Samples taken at each time point were stored at −80°C and were then processed simultaneously. Samples obtained at each time point were assayed in duplicate and averaged.

Synthesis of bacteriophage lambda Armored RNA particles. A common 3′ primer was used for the amplification of a series of bacteriophage lambda DNA fragments of increasing lengths. This primer was used in all of the amplification reactions. PCR products, which increased in length, were synthesized with different 5′ primers that hybridized at increasing distances from the 3′ primer. Purified lambda DNA (Ambion, Inc.) was used as the template for PCR. Each of the PCR products was cloned separately into the Armored RNA packaging vector. Purified Armored RNA particles were expressed and isolated as described previously (5).

RNA isolation and Northern blotting. Packaged RNA from the Armored RNA particles and *E. coli* RNA were isolated with the RNAqueous RNA isolation kit (Ambion, Inc.). Northern blotting of the purified RNA was performed with the NorthernMAX northern blotting kit (Ambion, Inc.). Oligonucleotide probes used for Northern blotting were 5′ end labeled with ^{32}P by using the KinaseMAX kit (Ambion, Inc.).

RESULTS

General strategy used to produce Armored RNA. The RNAs used as controls and standards in clinical assays for the detection of HIV-1 and HCV have an inherent weakness in that they are susceptible to degradation by RNases. Our goal was to produce an RNA preparation that was resistant to RNase digestion, that could be produced in a relatively inexpensive and straightforward manner, that was easily adapted to various RNA sequences, and that would act as a template for reverse transcription. Since the genomic RNA packaged in the *E. coli* bacteriophage MS2 is resistant to RNase digestion, we hypothesized that non-MS2 RNA sequences could be packaged within a similar structure to confer similar protection from RNases. Bacteriophage MS2 is a simple ribonucleoprotein structure composed of 180 coat protein molecules, one copy of maturase protein, and one copy of the 3.6 kb plus-strand gRNA. The coat protein makes up the bulk of the bacteriophage, assembling into an icosahedral structure of 26 nm in diameter (16).

The initial strategy was to produce viable, recombinant MS2 bacteriophage containing reRNA, but it was rejected for several reasons. First, recombinant coliphages are genetically unstable and quickly delete non-phage RNA sequences. Second, viable reRNA bacteriophage in clinical reference laboratories could proliferate and could cause serious contamination. Finally, the MS2 RNA replicase is a low-fidelity polymerase and would produce point mutations and deletions in an RNA standard.

Since the production of viable, recombinant MS2 bacteriophage was not an option for the packaging of reRNA, the alternative strategy which we adopted was to develop a plasmid-driven packaging system. Several researchers had shown that pseudoviral particles could be synthesized in vivo and in vitro with coat protein alone. In fact, a non-phage RNA sequence could be specifically packaged in *E. coli* as a pseudoviral particle if the recombinant RNA contained an "operator" sequence (11). The operator is a 19-base sequence bound by coat protein to initiate the assembly of the bacteriophage particle.

In the plasmid packaging system, the DNAs encoding the coat protein, the target RNA sequence, and the MS2 operator sequence were cloned downstream of an inducible *lac* promoter. This strategy used the high-fidelity *E. coli* RNA polymerase to transcribe the reRNA. The recombinant packaging vector was transformed into *E. coli*. Isopropyl-β-D-thiogalactopyranoside was added to induce the transcription of the reRNA and the expression of the pseudoviral particles. As coat protein is translated, it binds to the operator sequence at the 3′ end of the reRNA, initiating the encapsidation of the reRNA to produce pseudoviral particles. Unlike MS2, which is released into the spent medium by lysing *E. coli*, Armored RNA is localized in the cytoplasmic fraction of *E. coli*.

Construction of HIV-1 Armored RNA. To demonstrate the feasibility of the Armored RNA technology, we produced a control compatible for use with the Amplicor HIV-1 Monitor kit. The AR–HIV-B Armored RNA was generated for use as a positive control by packaging an RNA derived from a consensus sequence from the *gag* region of HIV isolates of clade B. We also produced an Armored RNA version of the QS used in the HIV-1 Monitor kit (AR-QS). In the HIV-1 Monitor assay, the QS RNA is the calibrating RNA which is added to each patient sample and which is used to calculate the patient's viral concentration.

Homogeneity of Armored RNA. The reRNA was isolated from purified AR–HIV-B. The majority of the reRNA packaged was approximately 900 bases in length, as detected by ethidium bromide staining and Northern blotting (Fig. 2).

The homogeneity of the AR–HIV-B preparation was demonstrated by taking fractions from a CsCl gradient. The AR–HIV-B banded as a sharp peak at a density of 1.35 g/ml, while native MS2 bacteriophage banded at 1.45 g/ml (Fig. 3). The MS2 particles were denser because they contained three times more RNA and maturase protein.

Durability of Armored RNA. The reRNA packaged within AR–HIV-B was completely resistant to DNase and RNase treatment under conditions in which naked DNA and RNA are both degraded rapidly (Fig. 4). The AR–HIV-B preparation was stable at temperatures of up to 64°C in the presence of 1 mM $MgCl_2$ but was stable only up to 54°C in 1 mM EDTA (data not shown). If the AR–HIV-B particles were heated at 70°C for 5 min, the coat protein was denatured, releasing the packaged reRNA and exposing it to nuclease attack (data not shown).

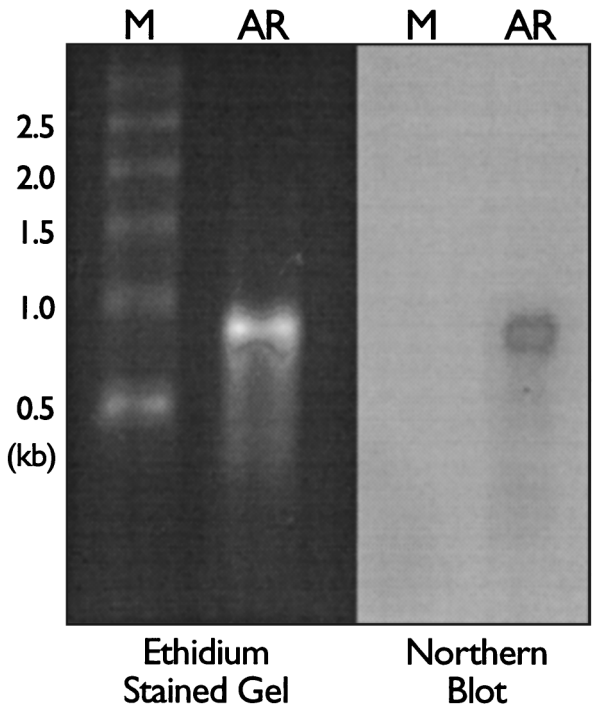

FIG. 2. Characterization of the recombinant RNA packaged in AR–HIV-B. reRNA was isolated from AR–HIV-B, fractionated in a denaturing 1% agarose gel, stained with ethidium bromide, and detected by UV fluorescence. The reRNA was transferred to a membrane and probed with a ^{32}P-labeled oligonucleotide to the 3′ end of the HIV-B sequence. Abbreviations: M, RNA markers; AR, AR–HIV-B reRNA.

Stability at 45°C. We investigated the stability of the Armored RNA incubated at 45°C for 3 days, which are the standard conditions used to examine shipping compatibility. Preliminary experiments indicated that Armored RNA was not completely stable in 10 mM Tris (pH 7.0)–100 mM NaCl–1 mM $MgCl_2$ (TSM) at low concentrations at room temperature or 45°C. Tenfold dilutions of the AR-HIV preparation were made in TSM, incubated at 45°C for 3 days, and then assayed for reRNA copy number. At concentrations below 0.05 mg/ml, the reRNA copy number of the AR-HIV decreased (data not shown).

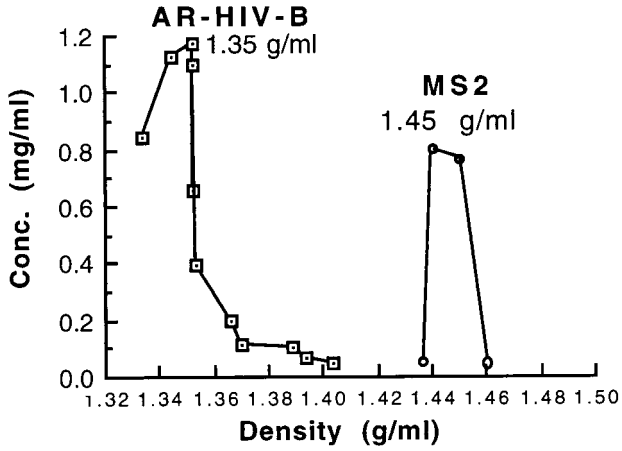

FIG. 3. Densities of AR–HIV-B and bacteriophage MS2 particles. MS2 and AR–HIV-B were loaded in separate gradients and centrifuged, and then 0.5-ml fractions were collected and weighed to determine the density of the CsCl. The optical density of each fraction at 260 nm was measured to calculate the Armored RNA and MS2 concentrations.

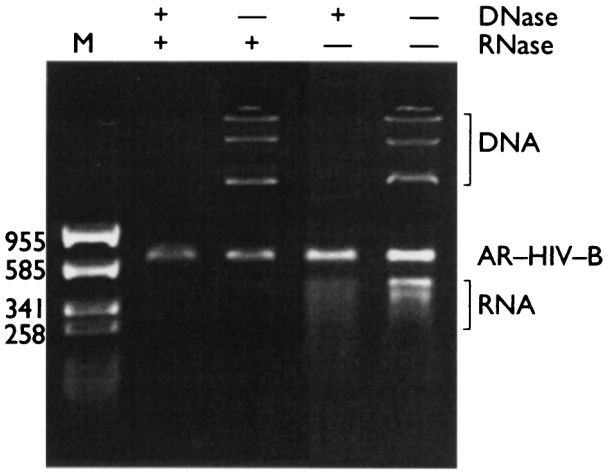

FIG. 4. Resistance of purified Armored RNA particles to nucleases. The particles were mixed with plasmid DNA and purified, naked reRNA. The mixture of plasmid DNA, reRNA, and intact Armored RNA was incubated with DNase I and/or the RNases at 37°C for 1 h, fractionated by gel electrophoresis in a 2.0% nondenaturing agarose gel, and detected by ethidium bromide staining and UV fluorescence. The numbers on the left are in base pairs.

We postulated that we could stabilize a specific Armored RNA at a low copy number by formulating it with a "null" Armored RNA (AR-1) at a concentration of 0.05 mg/ml. AR-1 is an Armored RNA in which only MS2 and some of the plasmid RNA sequence is packaged. To demonstrate that AR-1 could stabilize AR-HIV at low concentrations, AR-HIV was diluted to 2.5×10^{-7} mg/ml in a solution of 0.05 mg of AR-1 per ml in TSM and incubated 3 days at 45°C, and the copy number was compared to that of the AR-HIV stored at −20°C. There was no loss in copy number (data not shown). We have observed similar stabilizing effects using L-broth and StabilZyme AP (SurModics, Inc., Eden Prairie, Minn.), whereas StabilGuard (SurModics, Inc.), StabilZyme HRP (SurModics, Inc.), acetylated bovine serum albumin (1 mg/ml), and SeraSub and ProDil (CST Technologies, Inc., Great Neck, N.Y.) did not stabilize the Armored RNA at 45°C (data not shown).

Maximum size of reRNA which can be packaged. To define the size limits for reRNA packaging, we created constructs designed to package bacteriophage lambda RNA sequences of 0.5, 1, 1.5, 2, 3, and 4 kb. These particles were expressed and purified, and the RNA was isolated from each of these constructs. Only the construct encoding the 0.5-kb bacteriophage lambda RNA contained a reRNA of the expected size, as determined by ethidium bromide staining. The other constructs contained RNA which was heterogeneous in length (data not shown). Northern blotting of the purified recombinant RNA with probes directed to the 3′ terminus of the bacteriophage lambda sequence revealed that packaging of 500 bases of RNA was very efficient but that packaging of the 1- and 1.5-kb amounts of RNA was inefficient. As the size of the reRNA was increased, greater amounts of host (*E. coli*) RNA was packaged in preference to the amount of reRNA that was packaged. Although the 1.0- and 1.5-kb amounts of bacteriophage lambda RNA were detectable by Northern blotting, they were not detectable as discrete RNA species by ethidium bromide staining and UV fluorescence.

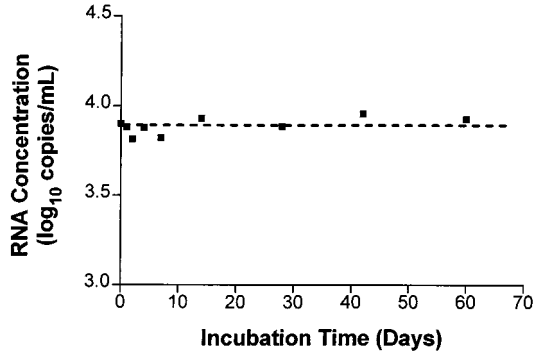

FIG. 5. Stability study of AR–HIV-B spiked into EDTA-anticoagulated human plasma at 4°C. AR–HIV-B was added to clarified plasma to a final concentration of ~7,500 copies/ml. Samples were incubated at 4°C for 0, 1, 2, 4, 7, 14, 28, 42, and 60 days. Samples from each time point were assayed in duplicate, and the copy number determinations were averaged. The mean for all of the samples was 7,780 copies per ml (3.8 $\log_{10}$; range, 6,530 to 9,020 copies per ml [range, 3.81 to 3.96 $\log_{10}$]), and the coefficient of variation was 10.7%. The dashed line represents the mean.

Stability of Armored RNA in plasma. AR-QS was diluted in human serum or in plasma spiked with acid citrate dextrose, sodium citrate, or EDTA to inhibit coagulation, incubated for 1 h at 21°C, and then processed by the HIV-1 Monitor assay. No loss of signal was observed in any of these samples, indicating that AR-QS was stable in any of these blood products (data not shown). AR–HIV-B in EDTA-anticoagulated plasma was stable after five freeze-thaw cycles (data not shown). Incubation of AR–HIV-B at 4°C for 60 days in EDTA-anticoagulated human plasma did not compromise the original signal (Fig. 5).

Armored RNA as a positive control in a clinical assay. AR–HIV-B was diluted in EDTA-anticoagulated human plasma at 65,000 copies/ml and was stored at −20°C in aliquots of 0.2 ml. To assess the performance of an Armored RNA control in a clinical setting, AR–HIV-B was used as the positive control in alternate runs of HIV-1 Monitor assay with clinical samples in place of the HIV-1 Monitor assay positive control (a naked RNA) provided with the HIV-1 Monitor kit. The Armored RNA positive control performed reliably over 180 days, with results comparable to those obtained with the high-positive control provided with the kit (Fig. 6).

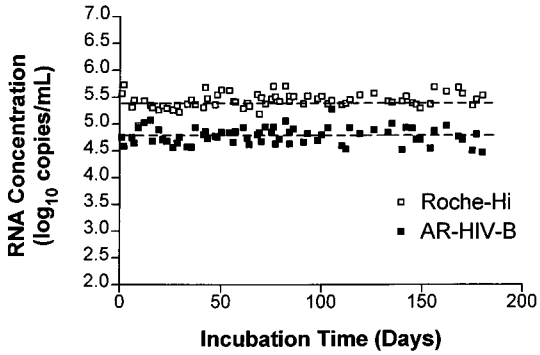

FIG. 6. Comparison of Armored RNA positive control and the HIV-1 Monitor assay high-positive control (Roche-Hi) used in a clinical setting over 180 days. AR–HIV-B was added to clarified EDTA-anticoagulated plasma to a final concentration of ~65,000 copies/ml, aliquoted into 0.2-ml samples, and stored at −20°C until it was used in the HIV-1 Monitor assay to determine the RNA copy number. The Armored RNA positive control and the HIV-1 Monitor assay high-positive control were used in clinical runs two to four times per week for 180 days. For the Armored RNA standard, the mean was 64,598 copies/ml, the range was 31,760 to 191,716 copies/ml (4.50 to 5.28 $\log_{10}$), and the coefficient of variation was 40%. For the HIV-1 Monitor assay high-positive control, the mean was 290,537 copies/ml; the range was 94,345 to 544,737 copies/ml (4.97 to 5.74 $\log_{10}$), and the coefficient of variation was 32%. The dashed lines represent the means for the two different positive controls.

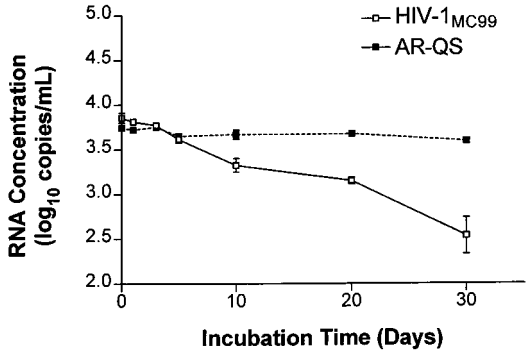

FIG. 7. Stability of Armored RNA and HIV coincubated in normal human plasma. AR-QS and HIV-1_{MC99} were coincubated in normal human plasma over 30 days at 37°C. The concentrations of the QS and HIV RNA sequences were determined by the HIV-1 Monitor assay.

Stability of Armored RNA compared to HIV in plasma. AR-QS and cultured HIV-1_{MC99} were coincubated in normal human plasma at 37°C for 30 days. Samples were taken in duplicate at seven different time points. AR-QS contains the same RNA sequence as the naked QS RNA standard in the HIV-1 Monitor kit. The HIV and QS sequences are amplified by the same primer set, but they can be distinguished by different internal capture sequences. Over the 30-day period, the HIV-1_{MC99} copy number declined by ~80% compared to the original input. The AR-QS was stable over the time course (Fig. 7). The mean for all the AR-QS samples was 4,553 copies/ml (3.66 $\log_{10}$), and the coefficient of variation was 9.8%.

DISCUSSION

The use of nucleic acid-based assays for the diagnosis and monitoring of HCV and HIV loads is a relatively new technology. Most of these assays depend on the use of RNA synthesized by in vitro transcription for the positive control and internal or external standards. It is essential, after calibrating the RNA standard, that it be possible to place the RNA in long-term storage without degradation. Several factors can lead to the early demise of an RNA molecule. High pH, high temperatures, and divalent cations such as magnesium and manganese will promote the hydrolysis of RNA. As well, RNases are ubiquitous and RNA is highly susceptible to even minor contamination with RNase. Thus, development of an environment for the synthesis and long-term maintenance of full-length RNA is not a trivial process.

Armored RNA technology was developed to overcome the weaknesses associated with the manufacturing and use of naked RNA as a standard or control in clinical diagnostic assays. With this technology, RNA strands are synthesized in *E. coli* and assembled into pseudoviral particles, thereby protecting the packaged RNA from RNase attack. Thus, the production of Armored RNA is not dependent on an RNase-free environment. In fact, the protocol for purifying the particles from *E. coli* involves incubation of the preparation with a high concentration of micrococcal nuclease to digest contaminating host RNA and DNA. Thus, the production procedure is much more forgiving than is the synthesis of RNA by in vitro transcription.

A single lot of Armored RNA produced from 1 liter of *E.*

coli cells can generate up to 10^{15} particles. These large lot sizes and the stability of the material allow cost-effective production.

An additional benefit of using Armored RNA rather than naked RNA as the positive control or the calibrator is the improved reliability of diagnostic assays. A naked RNA can be inadvertently contaminated with RNase during a clinical run, causing the failure of an entire run. Such failures are time-consuming and expensive. In addition, partial degradation of the calibrator may not be detected and may lead to erroneous results.

As an alternative to naked RNA, intact HIV and HCV are also used as standards or positive controls. The use of Armored RNA has many advantages over the use of intact virus as a positive control. It is noninfectious, decreasing the chance that a laboratory worker could be infected during either its production or its use in an assay. Shipping of Armored RNA requires less expense and less preparation than shipping of an infectious HIV standard or control. It is also more stable than HIV in plasma, and therefore, it can be shipped at ambient temperatures, decreasing the cost compared to those associated with dry-ice shipments. The manufacture of Armored RNA is easier, faster, and less hazardous than that of HIV. In addition, HIV has a high mutation rate, and therefore, it is impossible to know the precise sequence of such a standard or control, whereas the RNA in an Armored RNA preparation is homogeneous in its sequence.

Currently, there is little automation in HIV load assays. However, many companies are developing highly automated assays. Armored RNA materials will be ideal onboard reagents which are stable at room temperature for extended time periods. Armored RNA internal standards and positive controls could both be used in an automated assay without concern that they might degrade.

With the Armored RNA packaging system, there exists the flexibility of introducing a variety of different RNA sequences. Thus, standards for HCV, equine encephalitis virus, enterovirus, and other pathogenic RNA viruses can be engineered. For example, we have already produced and tested an HCV Armored RNA control (4, 15) compatible with both the HCV Monitor assay (Roche Diagnostic Systems, Inc.) and the HCV Quantiplex assay (Chiron Corp., Emeryville, Calif.), thereby producing a "universal" HCV standard for use in direct comparisons of assays.

The efficiency of packaging decreased quickly as the size of the RNA increased beyond 500 bases. Although most nucleic acid-based assays do not target RNA sequences longer than 500 bases, there are applications in which it would be useful to be able to package several thousand bases. For example, the HIV Quantiplex assay (Chiron Corp.) uses a standard which is about 3 kb in length, and therefore, it is not possible to produce a single Armored RNA standard for this assay. However, it may be possible to pool several different Armored RNA standards which collectively encode the entire control sequence. Also, if RNA sequences of several kilobases could be packaged, then a single Armored RNA standard could meet the needs of a variety of different viral assays designed to detect different regions of a viral genome. With such a standard, different research groups and clinical laboratories could make direct comparisons of their quantitative data.

Armored RNA standards can be used for applications other than infectious disease detection. Cytokine Armored RNA standards have been prepared for competitive RT-PCR. The QuantiKit assay (Ambion, Inc.) contains Armored RNA standards for determination of the concentration of cytokine mRNA. Since the reRNA in Armored RNA can be released from its packaging by heating at 70°C for 5 min, an Armored RNA standard can be added directly to a total RNA sample and the mixture can be heated to release the reRNA (data not shown). The heated sample may then be used directly in an RT reaction followed by PCR.

The production, maintenance, and use of intact RNA as standards and controls are not trivial processes. The use of Armored RNA technology offers a simple and reliable alternative to the use of naked RNA for viral assays which must contain dependable RNA standards and controls.

ACKNOWLEDGMENT

This research was supported in part by the National Institutes of Health (grant 1 R43 AI40529-01A1 from the National Institute of Allergy and Infectious Diseases).

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*Appendix (1), 2 pages is attached

Statement of **LISA M. AULERICH, RN**
For RCMP FILE **#2023-59269, 2023-59284**
[Page 1 of 3]
Attn: CPL. SCOTT SMITH

Since my first exposure to the practice of Nursing in 2008, the following has been my experience, in hospital, nursing home, and physician office settings with regard to required/suggested PPE use related to isolation patients: (Keeping this as simple and basic as possible…)

All patient care is centered around **Standard/Universal Precautions**, which consists of hand washing before care, wearing gloves, and then washing hands after patient care. The additions to Standard Precautions consist of *Teaching patients/visitors "Respiratory hygiene/cough etiquette," *"Safe injection practices," and *"Infection control practices for Special Lumbar Puncture Procedures"(the lumbar puncture added wearing a mask).

[[In Emergency/Trauma, for everyone who came in by ambulance, or in acute distress, we wore gown, surgical mask, gloves, face shield or eye protection for initial care, as we had to be prepared for any scenario]]

From there, when appropriate, patients who require "isolation" in ICU or on the floor, fall into any (or more than one) of the 3 following categories of 'Transmission-Based Precautions' (which are always used in conjunction with Standard/Universal Precautions):

1. **Contact Precautions** - which has 2 categories; **DIRECT and INDIRECT CONTACT**. (Contact precautions can be for people who have, for example, active infection like scabies, herpes, staph infection, or a wound with a lot of drainage, or diarrhea...OR for people who are "colonized" with things like MRSA)...
CONTACT PRECAUTIONS = Standard Precautions + PPE = Gloves, Gown, (if chance of "splash or spray" can add surgical mask & eye protection). Regular room.

2. **Droplet Precautions** - For people who are sick with something like Influenza, and people on vent or have a trache who require suctioning, for example.
DROPLET PRECAUTIONS = Standard Precautions + PPE = Gloves, Gown, Surgical mask, and sometimes eye protection. Regular room.

3. **Airborne Precautions** - For people who are sick with TB, for example.
AIRBORNE PRECAUTIONS = NEGATIVE PRESSURE ROOM + Standard Precautions + PPE = Gloves, Gown, N95 (Fit tested) mask, eye protection, cap that covers hair and ears, and shoe covers.

Lisa Marie Aulerich, RN
February 07, 2023

Lisa Marie Aulerich, Registered Nurse

Statement of **LISA M. AULERICH, RN**
For RCMP FILE **#2023-59269, 2023-59284**
[Page 2 of 3]
Attn: CPL. SCOTT SMITH

In my experience, prior to 2020: Outside of direct patient care, never, at any time, were all staff, patients, or family/visitors expected, required, or forced to continuously wear any type of mask or "social distance." If a patient, who was in isolation, required transport to any other part of facilities for testing or other procedures, **only the patient was required to wear a mask while outside of their room**. The only "distancing" measures used were - 1. common sense practices of avoiding having an isolation patient around crowds of people when outside of their room; 2. All staff and visitors maintained distance, outside of the patient's room, to don/apply all appropriate PPE prior to entering said patient's room; and 3. The door to the patient's room was kept closed outside of people entering or exiting the room.

There were never extra physical barriers, like plexiglass, added because of a virus or any other illness. There were never "rules" requiring 6 feet of distance between people, whether they were well or sick. And prior to 2020, there was never a time that hospitalized patients were deprived of their family/caregivers, their Advocates.

In my 53 years on this planet, in America, I've never witnessed or experienced another period in time where lockdowns, universal masking, or "social distancing" have been employed as large-scale mitigation for any illness. In fact, every single measure demanded of people, since 2020, goes against everything I've ever learned, and full-on promotes the weakening of the human immune system, which ultimately creates the likelihood that people, young to old, will be much more negatively affected by even minor illnesses when they are exposed in the future.

Furthermore, there is no rational science that supports the continuous use, by healthy people, of any kind of face mask. Part of my education in Nursing school involved how to properly apply and remove masks, when it was appropriate to wear them, and the dangers associated with applying dirty or contaminated masks. The general public has been forced to wear masks, everything from cloth to respirators, with no training or education. I was taught that a medical mask is a Medical Device. The mask wearing, forced on the general healthy population of a large portion of the world, has created not only a potential for bacterial, fungal, and viral infection related/caused by inappropriate mask wearing, but also great mental harms and social divisions, all while weakening the immune systems of millions, billions of healthy people of all ages, all over the world.

Lisa Marie Aulerich, RN
February 07, 2023

Lisa Marie Aulerich, Registered Nurse

Statement of **LISA M. AULERICH, RN**
For RCMP FILE **#2023-59269, 2023-59284**
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Attn: CPL. SCOTT SMITH

References:

more-than-400-studies-on-the-failure-of-compulsory-covid-interventions

studies-and-articles-on-mask-ineffectiveness-and-harms

isolation-guidelines-H.pdf

covid-19-infection-prevention-for-persons-with-sars-cov-2-infection

Lisa Marie Aulerich, Registered Nurse

Lisa Marie Aulerich, RN
February 07, 2023

Appendix (1) - [addition to] Statement of **LISA M. AULERICH, RN**

For RCMP FILE **#2023-59269, 2023-59284**

[Page 1 of 2]

Since early 2020, the beginning of "COVID-19 PANDEMIC," as a Nurse, I recognized immediately there are many aspects related to the "pandemic," "science," and the mitigation measures that have been fundamentally, medically, and ethically absurd, as well as harmful, and inhumane. I started doing extensive research into every aspect, compiling a massive amount of information, and have been diligently doing so for almost 3 years.

To my horror, this research has uncovered an exhaustive timeline of corruption involving (To name just a few aspects), multiple country's governments, health agencies, scientists, the WHO, the CDC, the FDA, Military, "Desk-top" exercises, Philanthropies, pharmaceutical / biotech companies, Patents, Grants, documented laboratory escapes, FOIA documents, EUA's, published research papers/studies that openly employ Gain-of-function/Dual-Use/Serial Passage/Directed Evolution, manipulations, and enhancing of multiple viruses/pathogens, which have not only made them contagious to humans, but also more transmissible, and more damaging and/or deadly. All of which are Potential **Violations of the 1925 Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous, or other Gases, and of Bacteriological Methods of Warfare [The Geneva Protocol] 1972 Convention on the Prohibition of the Development, Production, and Stockpiling of Bacteriological and Toxin Weapons and Their Destruction [the BTWC), and various other crimes.**

Additionally, dangerous protocols, censorship of safe, effective medications, censorship of Healthcare providers, lockdowns, forced mask wearing, psychological manipulations, and other draconian measures which have weakened people's immune systems, caused physical and mental health problems and harms, and have led to the preventable deaths of many. All of which are Potential **Violations of the International Covenant on Civil and Political Rights, and various other crimes.**

Lisa Marie Aulerich, Registered Nurse,
Feb. 09, 2023

Appendix (1) - addition to Statement of **LISA M. AULERICH, RN**

For RCMP FILE **#2023-59269, 2023-59284**

[Page 2 of 2]

Further, the manufacturing and distribution of mRNA biotechnology, under the guise of a "vaccine," which is neither safe nor effective nor a vaccine. The use of coercion, manipulation, threats, and in some cases, force, in the distribution of the mRNA injections, all while employing unethical and/or inhumane treatment by not providing informed consent, and by not weighing true risk-vs-benefit for the patient, all of which are **Violations of the Medical Code of Ethics, the Nuremberg Code, the Universal Declaration of Human Rights, and various other crimes.**

This summary is far from exhaustive.

In addition to my own research, I have compiled a tremendous amount of data and research produced by others, and am in the process of composing a detailed and factual report of timelines dating back to, at the very least, 1983 to present. Upon completion, I will be submitting said report, with verifiable references, as an addition to the extensive report and evidence produced by Dale Richardson, Kaysha Richardson, and Dr. Andrew Zywiec.

Lisa Marie Aulerich, Registered Nurse

LISA M. AULERICH, REGISTERED NURSE Feb 09, 2023

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Table of Contents

Why N95 Masks Fail to Stop the Spread

BY  MEGAN MANSELL JANUARY 24, 2023 MASKS 19 MINUTE READ

Since the beginning of the pandemic, we have been assured that community masking compliance would solve our problems and halt the spread of SARS-CoV-2. Yet real-world application data has consistently shown them to fail as a mitigation measure for personal protection, and instead of correcting course on the haphazard guidance that was doled out, we were told to *mask harder* with increasingly restrictive, albeit effectively non-mitigating apparatuses.

But *why* did they fail, and why do they continue to fail? Below, we delve into the specifics on why, even if assuming hypothetical perfect capture capacity, N95s fail to mitigate the spread of SARS-CoV-2.

We should begin by viewing viral transmissibility and output of infectious matter as spectrums, based on severity of illness, immune response of a given individual, and progress in the course of illness. These have all been shown to have significant impacts on the viral load of an individual infected with SARS-CoV-2. We will discuss output figures versus infectivity rates, and methods of measurement for minimum infective dose.

These are each important factors to consider in pathogenic mitigation even independently, but combined, they can show us specifically whether a given approach will have a desired outcome in the elimination of an infectious hazard. Output figures of respiratory emissions demonstrate how much matter is being expelled by an individual, and whether or not they are transmissible with a respiratory pathogen, but output figures vary greatly between more severe stages in onset of illness, recovery periods, and when PCR-negative for a given pathogen.

By comparing output with particle- to- plaque forming unit (PFU) ratios, we are given a rate of how many particles emitted are viable virions capable of causing infection. Each of these infectious units is referred to as a PFU. The number of PFUs required to be received by a

potential host is given as a minimum infective dose (MID) figure, which is a threshold that once met, onset of infection is to be anticipated.

By looking at figures for particle- to- PFU ratio and calculating MID potential, the end product is the potential number of individuals who can be infected over a given period of time.

With this MID threshold for the potential of infectivity, we can then apply the hypothetical perfect capture capacity of a given apparatus to see whether the best- case scenario results in likelihood of the apparatus mitigating, or preventing MID threshold from being met for the hazard.

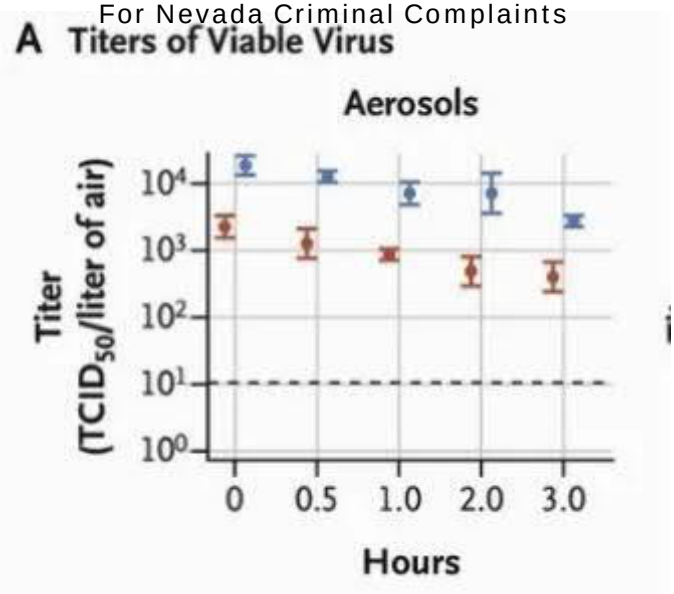
Here, we look at the output, particle- to- PFU ratio, and MID for SARS-CoV-2, versus the hypothetical perfect capture capacity for N95s, to demonstrate that even with a perfect rate of capture (and in this case, of matter far smaller than the apparatus is approved or designed to capture), the 5% percent never captured is still a plentiful enough potential exposure to infectious matter to result in infection.

Particle ranges and corresponding behavior of emitted matter

Pandemic mitigation measures should have begun with minimum viable particle size, which for SARS-CoV-2 falls at 0.06-0.14 µm. While frequently pushed by public health officials, N95s are solely rated and approved to capture matter greater than 0.3 µm. More than 90% percent of exhaled particulates have been shown to fall *under* 0.3 µm. This size of matter remains aloft for extended periods — hours, even days, depending on air exchange rates within the given space. SARS-CoV-2 has been shown to remain viable after hours as an aerosol outside of a host, and for days on surfaces.

"The SARS-CoV-2 virus was observed to be viable for 3 hr. in aerosols, with decrease in infectious virus concentration from $10^{3.5}$ to $10^{2.7}$ $TCID_{50}$ per liter of air."

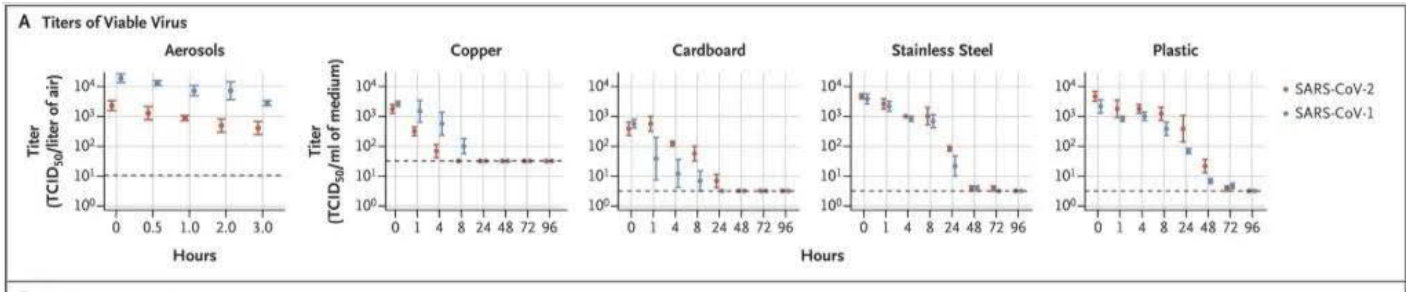
This study used lab-generated aerosols containing infectious SARS-CoV-2, and observed viability of emitted matter on different surfaces and as aerosols over time.



When considering the following, one also wonders if porous mask and respirator membranes and played a role in increasing the term of viability for viral matter:

"The survival times of airborne viruses on surfaces differ based on whether the surfaces are nonporous (e.g., plastic, stainless steel, glass) or porous (e.g., papers and clothes). Nonporous surfaces are major contributors to disease transmission since the survival times of airborne viruses on them have been observed to be much longer than those of porous surfaces."

Masks and respirators certainly count as porous surfaces. Many respirators are also constructed of melt-blown plastics. Has viral viability on mask membranes been studied to a great enough extent?

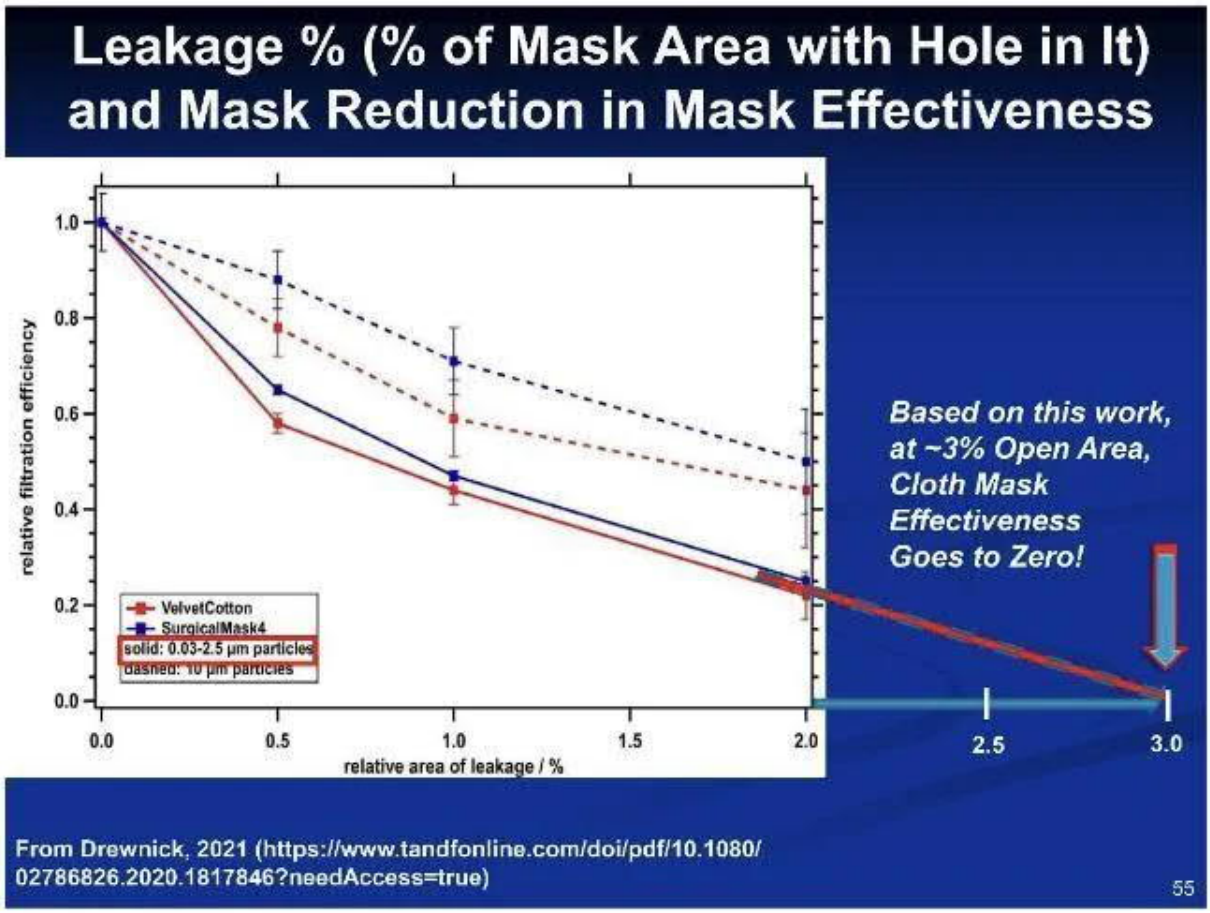


Aerosol viability rates are important because they demonstrate the capacity for transmission in enclosed spaces without a transmissible individual present. *With* a transmissible individual present and emitting into the given space, output would be a constant, and viable viral matter would increase atmospheric saturation of the pathogen on a per-breath basis.

Some have recently commented that masks and N95s are even more effective when particle sizes get smaller than 0.3 microns. This theoretical construct, known as Brownian Motion, only occurs when there is essentially no velocity in the system being studied.

But with masks and respirators – assuming the person is living, breathing, and *not dead* – significant momentum from airflow (breathing in and out) suggests the particles are in the laminar flow regime and not at near- zero velocity. Thus, except for a potentially very brief time between breathing in and out, the Brownian flow regime is not possible.

An overlooked yet critical issue with masks and respirators is the seal – small gap areas render these apparatuses ineffective for the wearer. Seldom, if ever, is anyone wearing these apparatuses correctly, under the necessary terms of wear, so we are met with already non-mitigating apparatuses being worn incorrectly.



According to these figures for fit versus leakage, 3.2% percent leakage equates to 100% percent inefficacy.

These are all factors that must be considered when addressing the cause of an apparatus failing to mitigate a given hazard. By next examining emissions output, Minimum Infective Dose, Plaque Forming Units, and how they relate, we can better understand why engineering

controls were always the correct response, not mass implementation of respiratory protection apparatuses.

Respiratory Emissions from "Sick" Patients – PCR-Positive versus Negative Test Results:

In research on aerosol output in healthy versus SARS-CoV-2 PCR-positive test subjects, 90%+ percent of emitted particulates by PCR-positive test subjects were under 0.3 μm, and counts of emitted matter were conducted comparing individuals with different severities of illness with PCR-negative subjects.

"The median exhaled particle count was highly significantly elevated in SARS-CoV-2 PCR-positive patients (1490.5/L [46.0–34,772.0/L]) compared with healthy controls (252.0/L [0.0–882.0/L]; $p < 0.0001$."

If we use a respiratory emission rate of 4.3-29 liters per minute (from EPA Exposure Factors Handbook), the highest-output PCR-positive range of 34,772 particles per liter multiplied by 29 liters per minute is as high as 1,008,388 particles emitted per minute.

While I am not asserting that all of those particulates were individual virus particles, or viable virus particles for that matter, there is nevertheless a highly significant difference in the matter emitted by PCR-positive and negative individuals (median values of 1,490.5 vs 252). A ratio for converting particles to PFUs will be introduced after the role of PFUs is discussed.

Particle Sizes and Emission Rates:

The study previously discussed measures- emitted particle- size ranges in SARS-CoV-2 positive and negative subjects.

"Regarding the particle size distribution, the available size channels (in total, 14 size channels from 0.15 to 5.0 μm) were analyzed in across three size bands: <0.3 μm, 0.3–0.5 μm, and >0.5–5.0 μm. For both groups, the majority of the aerosols (>90% in the SARS-CoV-2 PCR-positive group and >78% in the -negative group) were found in the smallest range (<0.3 μm). Especially for the COVID-positive group, increases in total aerosol concentration were dominated by increases in particles ≤0.3 μm."

Ten individuals from the 64 hospitalized patients sampled, who were among the most severe cases presenting, were responsible for around 64.8% percent of exhaled particle counts, so it is important in this case to look at *least* conservative output range and the potential for infectivity when running output and minimum infective dose calculations. Specifically, the paper stated:

"In the SARS-CoV-2 PCR-positive group, 15.6% (n = 10/64) showed high counts and were responsible for 64.8% of all exhaled particle counts in the group. Moreover, the 15.6%, equating to 3.5% of all patients (n = 10/288), was responsible for 51.2% of all exhaled particles."

If we compare those experiencing the greatest severity of illness with rates of infectivity, we can understand more about viable particle output by transmissible individuals. Considering the low output of both emitted matter and virions by PCR-negative and recovering PCR-positive test subjects, it may be safe to speculate that it speaks to the low likelihood of asymptomatic transmission being a leading factor in viral spread.

The presence of RNA copies versus concentrations of viable virions

Not all RNA copies or virus particles are capable of forming PFUs resulting in viral replication. While data has been provided for how many infectious units are generated, this is *not* the emissions output rate. These are estimates on total viral production during an infection.

"Dividing by estimates for the inverse of the viral clearance rate gives an estimated total production of 3×10^9 to 3×10^{12} virions, or 3×10^5 to 3×10^8 infectious units over the complete course of a characteristic infection."

Simplified, that is a total production of 3 billion to 3 trillion virus particles, or 300,000 to 300 million infectious units generated over the course of illness.

Virion output

There are different methods of establishing virion output, which offer slightly different ranges when viewed side- by- side. Some studies show total virions emitted, such as the following:

"Some patients have viral titers that exceed the average titer of Wölfel et al by more than two orders of magnitude thereby increasing the number of virions in the emitted droplets to well over 100,000 per minute of speaking."

Other studies give total particle counts and rely on using conversion factors from total output to viable virions. What is important to establish is that overall virus particulate output does not equal total viable virions, meaning virions capable of creating Plaque Forming Units (PFU).

PFUs – Understanding virus particles needed to form individual Plaque Forming Units (PFU):

While all emitted viral RNA and virus particles are not capable of viral replication and the creation of PFUs, it is understood that each PFU is created by one viable viral particle. The following excerpts discuss the impact of PFUs on viral infections and onset.

"The assay is designed so that each plaque results from infection by multiplying a single infectious virus particle. As such, PFU/ml is considered a measure of the number of infectious units per milliliter (IU/ml), with the caveat that one cannot be certain of a one-to-one ratio of plaques to infectious particles in the applied aliquot."

"For most animal viruses, one infectious particle is sufficient to initiate infection."

"The linear nature of the dose-response curve indicates that a single virion is capable of initiating an infection. However, the high particle-to-pfu ratio of many viruses shows that not all virions are successful. A high particle-to-pfu ratio is sometimes caused by the presence of noninfectious particles with genomes that harbor lethal mutations or that have been damaged during growth or purification."

"It is generally assumed that a plaque is the result of the infection of the cell by a single virion. If this is the case then all virus produced from virus in the plaque should be a clone, in other words it should be genetically identical."

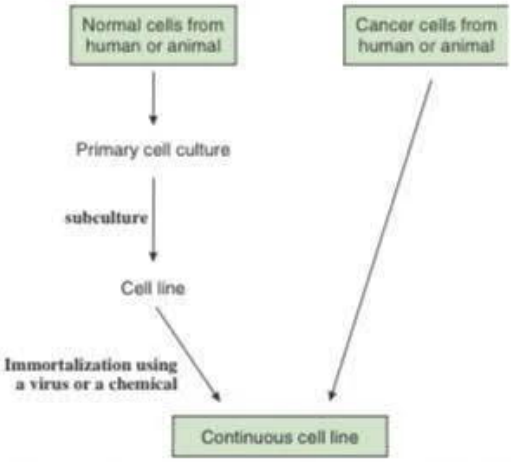


Figure 2.2 *Derivation of continuous cell lines of human and animal cells.* Most types of cell taken from the body do not grow well in culture. If cells from a primary culture can be subcultured they are growing as a cell line. They can be subcultured only a finite number of times unless they are immortalized, in which case they can be subcultured indefinitely as a continuous cell line. Cancer cells are already immortalized, and continuous cell lines may be established from these without further treatment.

2.3 Isolation of viruses

Many viruses can be isolated as a result of their ability to form discrete visible zones (plaques) in layers of host cells. If a confluent layer of cells is inoculated with virus at a concentration so that only a small proportion of the cells is infected, then plaques may form where areas of cells are killed or altered by the virus infection. Each plaque is formed when infection spreads radially from an infected cell to surrounding cells.

Plaques can be formed by many animal viruses in monolayers if the cells are overlaid with agarose gel to maintain the progeny virus in a discrete zone (Figure 2.5). Plaques can also be formed by phages in lawns of bacterial growth (Figure 2.6).

It is generally assumed that a plaque is the result of the infection of a cell by a single virion. If this is the case then all virus produced from virus in the plaque should be a clone, in other words it should be genetically identical. This clone can be referred to as an isolate, and if it is distinct from all other isolates it can be referred to as a strain. This is analogous to the derivation of a bacterial strain from a colony on an agar plate.

There is a possibility that a plaque might be derived from two or more virions so, to increase the probability that a genetically pure strain of virus has been obtained, material from a plaque can be inoculated onto further monolayers and virus can be derived from an individual plaque. The virus is said to have been plaque purified.

When a virus is first isolated it may replicate poorly in cells in the laboratory, but after it has gone through a number of replication cycles it may replicate more efficiently. Each time the virus is 'sub-cultured' (to borrow a term from bacteriology) it is said to have been passaged. After a number of passages the virus may be genetically different to the original wild strain, in which case it is now a laboratory strain.

2.4 Centrifugation

After a virus has been propagated it is usually necessary to remove host cell debris and other contaminants before the virus particles can be used for laboratory studies, for incorporation into a vaccine, or for some other purpose. Many virus purification procedures involve centrifugation; partial purification can be achieved by differential centrifugation and a higher degree of purity can be achieved by some form of density gradient centrifugation.

2.4.1 Differential centrifugation

Differential centrifugation involves alternating cycles of low-speed centrifugation, after which most of the virus is still in the supernatant, and high-speed centrifugation, after which the virus is in the pellet (Figure 2.7).

2.4.2 Density gradient centrifugation

Density gradient centrifugation involves centrifuging particles (such as virions) or molecules (such as nucleic

To summarize, one viable viral particle, or virion, is capable of creating one PFU, in which this viral particle replicates. Some of the matter created is solely viral RNA incapable of independently causing infection, and some of the matter created is capable of replication and infection.

The relationship between **the total output of particles and the creation of PFUs is called a particle to PFU ratio. For SARS-CoV-2, the ratio of emitted particles to PFUs is 1000 to 1,000,000.**

PFU and Minimum Infective Dose Studies

Our breathing rate varies depending on age and level of activity. The average human respiratory rate is 16-20 breaths per minute. For purposes of this discussion, a breathing rate of 4.3-29 liters per minute (from EPA Exposure Factors Handbook) will be used. This reference gives a range of as high as 53 liters per minute. We will look into output as virions per minute, and minimum infective dose as PFUs and virions for transmission, as both are explored in available research.

Minimum Infective Dose (MID) Data from the Literature:

Comparison studies of different respiratory viruses and SARS-CoV-2 animal studies have been used to contribute to many MID estimates, but this paper focuses solely on human studies as much as possible.

"Although the MID of SARS-CoV-2 in humans needs more research, it is expected to be approximately 100 virus particles. The only human study regarding a coronavirus has been reported for HCoV-229E and its MID is 9 PFU. Furthermore, if aerosol transmission is the dominant mode, then the MID would be lower."

"In fact, aerosol-based infections require less doses, e.g., ~100 times less than droplet-based infections."

"The minimum infective dose of SARS-CoV-2 causing COVID-19 in humans in assessed cross-sectional and case-series studies was low; in a case-series study that investigated infective dose in 273 specimens from 15 SARS-CoV-2-positive patients, detected minimum infective dose was 1.26 PFU in vitro in the COVID-19-RdRp/Hel assay.1 In another study, 248 oro-nasopharyngeal samples of COVID-19 individuals were assessed, and infective dose was reported to be 364 PFU."

"In a case-series study which assessed 97 children 10 years and lower, 78 children aged 11–17 years, and 130 adults, the infective dose in 11–17 years children was lower than two other groups (125 PFU). Children had lower live virus growth, higher cycle thresholds, and lower viral concentration in comparison with adults, so children are not the main carriers of infection. Children aged ⩽10 years were more likely to be asymptomatic than others."

"One of the most well discussed one (sic) is the study done by Basu et al., the main goal of which was to evaluate the size of the droplets which have high probability of causing

infection. But besides this finding, they also had some points related to the viral load which can cause the infection. They found that the number of virions placing at a closely situated individual's nasopharynx over the 2.5 h duration approximates to (11/5) virions per minute × 60 min × 2.5 h = 330."

Comparison studies including other Coronaviruses have shown that PFUs can be quite low for respiratory viruses.

"Estimated infectivity of SARS-CoV-1 was comparable to other coronaviruses including HCoV-229E, a causative agent for a mild cold in humans. ID10 and ID50 of SARS-CoV-1 were reported as 43 and 280 PFU (400 TCID50) in an experimental study."

Virus	Strain	Dose		Route of administration	
		$TCID_{50}$	PFU		
[a]Coronavirus	HCoV-229E	13	9	NR	
[b]Influenza	H1N1	1.0×10^3	700	IN	Hayden [9]
	H2N2	0.6–3	0.42–2.1	Aerosol	Alford [10]
	H3N2	1.0×10^7	7 000 000	IN	Treanor [11]
[c]Rhinovirus	RV15	0.032	0.0224	IN	Couch [12]
[d]Adenovirus	Type 4	0.5	0.35	Aerosol	Couch [13]
[e]Coxsackievirus	A21-48654	6	4.2	IN	Couch [12]
[f]RSV	Ts-1	30–40 (33% infected)	21–28	IN	Parrott [14]
	Type 39	100	70	Aerosol	Bischoff [15]

Table 1. Infective dose of relevant respiratory viruses in humans

"The human ID_{50} for seasonal coronavirus subtype 229E that causes mild common cold in humans was reported to be 13 $TCID_{50}$."

The figures discussed in the provided studies on SARS-CoV-2 were 1.26, 100, 125, 330, and 363 PFU for transmission, speaking again to a broad spectrum of susceptibility.

Output of viable virions versus Minimum Infective Dose threshold potential

By using these available figures, we can tackle the assertion that N95s provide meaningful protective value from infectious aerosols by looking at output contributions, infectivity potential of emitted viral matter, PFU ranges, then we can weigh these ranges against a

hypothetical perfect capture capacity of N95s capturing 95% percent of matter, versus the remaining uncaptured 5% percent. Again, note that N95s are not designed nor approved to capture <0.3 µm, and we are discussing a pathogen which has a minimum viable particle size of 0.06-0.14 µm.

Respiratory emissions from a transmissible individual have been shown to reach higher than 100,000 virions in one minute, though not all emitted virions can be assumed to be infective. Additional research papers have claimed an output as high as 750,000 virions/minute (but data supporting such claims is lacking). It should also be noted that we of course do not inhale all of an individual's expired matter, but our proximity to a transmissible individual, their rate of output, duration within the space, and the ventilation within that given space are all factors that will have an impact on likelihood of transmission that cannot be expressed in a linear or predictable fashion.

In the study we explored above, the highest-output PCR-positive range was 34,772 particles per liter, with those emitting the highest ranges of output composing 64% percent of total matter emitted.

First, we will create an hourly output of each of these ranges, then apply particle- to- PFU ratio for each range of 1,000 to 1,000,000.

Output range A

An hour of a transmissible individual in an enclosed space emitting 100,000 virions per minute would be an output of 6 million virions (100,000×60 minutes). An 8- hour period in an enclosed space equates to 48 million virions emitted (100,000×480 minutes). With the particle- to- PFU ratio of 1,000 to 1,000,000,, this gives us 6,000 viable virions in one hour, 48,000 in 8 hours.

The PFU figures from the discussed studies given were 1.26, 100, 125, 330, and 363 PFU required as minimum infective dose. I divided each quantity of viable virions by each PFU figure to get each potential for MID threshold listed.

	/1.26 PFU	/100 PFU	/125 PFU	/330 PFU	/363 PFU
6000 viable virions per hour	MID threshold for 4761 people	MID threshold for 60 people	MID threshold for 48 people	MID threshold for 18 people	MID threshold for 16 people
48,000 viable virions per 8 hours	MID threshold for 38,095 people	MID threshold for 480 people	MID threshold for 384 people	MID threshold for 145 people	MID threshold for 132 people

Output range B

In the PCR-positive particle collection study, 34,772 particles per liter was the highest range collected, with ~64% percent of total particles emitted and counted coming from 10 sources who were among the most adversely affected by their infection with SARS-CoV-2. If we look at 34,772 particles multiplied by an emission volume of 29 liters per minute, the output range is as high as 1,008,388 particles emitted per minute.

The EPA Exposure Handbook lists a per-minute range as high as 53 liters per minute, so using a figure of 29 liters per minute is not the highest range of output possible. The output ranges of 7 and 29 liters per minute will be used because they are output ranges falling in sedentary to moderate activity level ranges.

At 29 liters per minute, multiplied by 34,772 particles per liter (1,008,388 particles), for a 60-minute duration of output, the product is 60,503,280 (1,008,388×60) particles per hour, and 484,026,240 per 8- hour period (1,008,388×480 minutes).

With a particle- to- PFU ratio of 1,000 to 1,000,000 for COVID, this gives us 60,503 viable virions emitted per hour, and 484,026 viable virions per 8- hour period.

	/1.26 PFU	/100 PFU	/125 PFU	/330 PFU	/363 PFU
60,503 viable virions per hour	MID threshold for 48,018 people	MID threshold for 605 people	MID threshold for 484 people	MID threshold for 183 people	MID threshold for 166 people
484,026 viable virions per 8 hours	MID threshold for 384,147 people	MID threshold for 4840 people	MID threshold for 3872 people	MID threshold for 1466 people	MID threshold for 1333 people

These calculations give us the output potential of a transmissible individual in terms of not only how many virus particles are emitted, but the potential for reaching MID threshold to infect a given number of people based on which PFU figure is used.

While the range of PFU demonstrated for SARS-CoV-2 is quite broad, we should anticipate a spectrum of transmissibility based on individual health status and immune response. While 1.26 PFU seems quite low, the PFU for SARS-Cov-1 has been shown to be as low as 13 PFU to meet MID threshold for onset of infection.

Even if a lower emissions output of 7 liters per minute is used, that gives a rate of 243,404 particles per minute (34,772 x 7)), 14,694,240 particles per hour (234,404 x 60), and 116,833,920 (243,404 x 480) particles per 8- hour period. With particle- to- PFU ratio of 1,000 to 1,000,000 applied, a 1one- hour period is an output of 14,604 viable virions, and 116,833 in an 8- hour period.

	/1.26 PFU	/100 PFU	/125 PFU	/330 PFU	/363 PFU
14,694 viable virions per hour	MID for 11,661 people	MID for 146 people	MID for 117 people	MID for 44 people	MID for 40 people
116,833 viable virions per 8 hours	MID for 92,724 people	MID for 1168 people	MID for 934 people	MID for 354 people	MID for 321 people

With these output ranges of sedentary to moderate intensity, many times the MID threshold is met for all established PFU figures.

Why N95s failed/are failing/will fail

Respirators with an N95 rating are designed and approved to capture 95% percent of non-oil-based matter greater than 0.3µm. SARS-CoV-2 has a minimum viable particle size of 0.06-0.14 µm, well under the 0.3µm threshold even if bound to larger matter, so this is a hypothetical of perfect capture capacity for a particle range that these apparatuses are not designed or approved to capture, nor has their application data shown them to perform at or near 95% percent.

For the purpose of an exercise in hypothetical perfect capture capacity, we will grant them an assumption of perfect 95% rate of capture. If we apply 5% of the MID figures demonstrated in to demonstrated in output ranges A and B, it will demonstrate the infectivity of viable virions versus the 5% percent never captured (e.g., no leakage) if a hypothetical 95% percent perfect rate of capture is met.

Output range A

	/1.26 PFU	/100 PFU	/125 PFU	/330 PFU	/363 PFU
6000 viable virions per hour	MID for 4761 people	MID for 60 people	MID for 48 people	MID for 18 people	MID for 16
5% of which is	MID for 238 people	MID for 3 people	MID for 2 people	MID for .9 people	MID for .8 people
A 48,000 viable virions per 8 hours	MID for 38,095 people	MID for 480 people	MID for 384 people	MID for 145 people	MID for 132 people
5% of which is	MID for 1904 people	MID for 24 people	MID for 19 people	MID for 7 people	MID for 6 people

Output range B

29 liters per minute

	/1.26 PFU	/100 PFU	/125 PFU	/330 PFU	/363 PFU
60,503 viable virions per hour	MID for 48,018 people	MID for 605 people	MID for 484 people	MID for 183 people	MID for 166 people
5% of which is	MID for 2400 people	MID for 30 people	MID for 24 people	MID for 9 people	MID for 8 people
484,026 viable virions per 8 hours	MID for 384,147 people	MID for 4840 people	MID for 3872 people	MID for 1466 people	MID for 1333 people
5% of which is	MID for 19,207 people	MID for 242 people	MID for 193 people	MID for 73 people	MID for 66 people

7 liters per minute

	/1.26 PFU	/100 PFU	/125 PFU	/330 PFU	/363 PFU
14,694 viable virions per hour	MID for 11,661 people	MID for 146 people	MID for 117 people	MID for 44 people	MID for 40 people
5% of which is	MID for 583 people	MID for 7 people	MID for 5 people	MID for 2 people	MID for 2 people
116,833 viable virions per 8 hours	MID for 92,724 people	MID for 1168 people	MID for 934 people	MID for 354 people	MID for 321 people
5% of which is	MID for 4636 people	MID for 58 people	MID for 46 people	MID for 17 people	MID for 16 people

If we assume a hypothetical perfect capture capacity for N95s of particle size ranges of matter that these apparatuses are not designed or approved to capture, and apply the remaining 5% percent never captured, the vast majority of ranges of output versus PFU required to meet MID threshold still allow exposure for many times the MID threshold for potential infection of many individuals in 1- hour and 8- hour periods for each established range of output.

Summary

We became lax with our mitigation standards during the SARS-CoV-2 outbreak because this pathogen is not fatal for the overwhelming majority of people, with a survivability rate shown around 99.8% percent. This flippancy toward a hazard-specific response is incredibly dangerous when applied to deadlier pathogens and exposure elements.

By examining the hypothetical best-case scenario, we can better predict if a given measure will have a mitigating impact on the identified hazard. For N95s versus output, particle- to-PFU ratios, and MID for SARS-CoV-2, best-case scenario of hypothetical perfect capture of matter that these apparatuses are neither designed nor approved to capture shows them to

still be non-mitigating for this hazard, and recommendations for their use should be immediately reconsidered.

Additional resources:

Discusses average viral load from samples: https://www.nature.com/articles/s41586-020-2196-x.

Minimum Infective Dose

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7090536/ (on MID in general, not SARS-CoV-2 specific).

Glossary

aerosol – particles dispersed in air or gas, defined as less than 5 microns in size.

asymptomatic (spread) – the theoretical concept of transmitting a pathogen to others while not exhibiting any established symptoms of said pathogen.

atmospheric saturation – the amount of viable matter that remains aloft within an enclosed space.

Brownian Motion – the theoretical construct explaining the chaotic, unpredictable movement of particulates under 0.3 microns when at near-zero velocity.

emissions – exhaled respiratory matter.

laminar flow regime – fluid particles following smooth paths in layers.

minimum infective dose – the minimum amount of a hazard one must be exposed to in order for onset of illness to be anticipated.

N95 – a non-oil-capturing particulate filtering respirator capable of blocking up to 95% of matter over 0.3 µm.

onset – the beginning of an illness taking hold once minimum infective dose threshold has been met.

output – the emissions being released into a given environment by a transmissible individual.

output as a constant – an individual within an enclosed space emitting infectious particle-laden respiratory aerosols into the given atmosphere, saturating the given atmosphere more with infectious matter with each breath.

particle to PFU ratio – a ratio for pathogenic output calculations that weighs the total number of particles emitted against the particles that are viably infectious.

PCR-negative – a given test subject does not receive a positive test result when tested with PCR methodology for a given pathogen. PCR stands for using the polymerase chain reaction technique.

PCR-positive – a given test subject receives a positive test when tested using the polymerase chain reaction technique for a given pathogen.

perfect capture capacity – capture of hazardous matter at a matched percent efficacy given by a product as its hypothetical best rate possible.

Plaque Forming Units (PFUs) – the creation of PFUs require one virion infecting a host cell, where viral replication begins. A threshold of a given number of PFUs is required for onset of illness, known as the minimum infective dose.

RNA copies – genetic material required to make copies of proteins within a cell. RNA copies do not equate to viable virions capable of replication.

TCID50 – an abbreviation for tissue culture infectious dose, which is the dilution of a virus required to infect 50% of cells in a culture assay.

viral load – the amount of virus particles in a given substance, emission, or within the body of a transmissible individual.

viral viability – virions capable of infecting a cell and creating plaque forming units (PFUs).

virion or viable virion- a complete infectious virus particle.

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Analysis of the Virus SARS-CoV-2 as a Potential Bioweapon in Light of International Literature

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ABSTRACT

Introduction:

As of early 2022, the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pandemic still represents a worldwide medical emergency situation. The ongoing vaccination programs can slow down the spread of the virus; however, from time to time, the newly emerging variants of concern and antivaccination movements carry the possibility for the disease to remain in our daily lives. After the appearance of SARS-CoV-2, there was scholarly debate whether the virus was of natural origin, or it emerged from a laboratory, some even thinking the agent's potential biological weapon properties suggest the latter scenario. Later, the bioweapon theory was dismissed by the majority of experts, but the question remains that despite its natural origin, how potent a biological weapon the SARS-CoV-2 virus can become over time.

Materials and Methods:

Based on 12 bioweapon threat assessment criteria already published in 2018, we performed a literature search and review, focusing on relevant potential bioweapon properties of the virus SARS-CoV-2. Instead of utilizing a survey among experts, we tried to qualify and quantify characteristics according to the available data found in peer-reviewed papers. We also identified other key elements not mentioned in the original 12 bioweapon criteria, which can play an important role in assessing future biological weapons.

Results:

According to the international literature we analyzed, SARS-CoV-2 is a moderately infectious agent (ID50 estimated between 100 and 1,000), with high infection-to-disease ratio (35%–45% rate of asymptomatic infected) and medium incubation period (1–34 days, mean 6–7 days). Its morbidity and mortality rate can be categorized as medium (high morbidity rate with significant mortality rate). It can be easily produced in large quantities, has high aerosol stability, and has moderate environmental stability. Based on laboratory experiments and statistical model analysis, it can form and is contagious with droplet nuclei, and with spray technique utilization, it could be weaponized effectively. Several prophylactic countermeasures are available in the form of vaccines; however, specific therapeutic options are much more limited. In connection with the original assessment criteria, the SARS-CoV-2 only achieved a "0" score on the ease of detection because of readily available, relatively sensitive, and specific rapid antigen tests. Based on the pandemic experience, we also propose three new assessment categories: one that establishes a mean to measure the necessary quarantine restrictions related to a biological agent, another one that can represent the personal protective equipment required to work safely with a particular agent, and a third one that quantifies the overall disruptive capability, based on previous real-life experiences. These factors could further specify the threat level related to potential biological weapons.

Conclusions:

Our results show that the virus can become a potent bioweapon candidate in the future, achieving a total score of 24 out of 36 on the original 12 criteria. The SARS-CoV-2 has already proven its pandemic generating potential and, despite worldwide efforts, still remains an imminent threat. In order to be prepared for the future possibility of the virus arising as a bioweapon, we must remain cautious and take the necessary countermeasures.

INTRODUCTION

As weapons of mass destruction, agents classified as biological weapons are under strict international regulations. One of the main nonproliferation efforts is the Biological and Toxin Weapons Convention (BTWC), which entered into force in 1975, having 183 member parties as of late 2021.[1] This criminalized the development, production, and storage of bioweapons, declaring the mentioned procedures as war crimes. However, there are states that did not sign the treaty, nongovernmental actors who are not bound by international regulations (e.g., individual perpetrators and terrorist groups), and, in some cases, even states that ratified the BTWC that did not follow the restrictions.[2] These examples carry the

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possibility that a newly emerging infectious agent, which is not well known but is readily available to be collected from natural cases, can become a bioweapon candidate, particularly if its properties make it ideal for biological warfare utilization.

The virus SARS-CoV-2 emerged in late 2019, and after several months, the World Health Organization declared the epidemic caused by the mentioned agent a pandemic.[3] Almost 2 years have passed since this declaration; our lives inevitably changed in light of travel and movement restrictions and internal lockdowns.

The virus, despite the efforts, showed a rapid spreading pattern, combined with a significant case fatality ratio. Eventually, the seemingly ideal properties of the SARS-CoV-2 raised the question if it was an engineered biological weapon, intentionally released, or an agent that unintentionally escaped in a laboratory leakage event.[4,5] These theories were later dismissed by studies, concluding that the virus most probably has natural origins, which is strengthened by the lack of signs of genetic engineering.[6,7]

SARS-CoV-2 is a member of the Coronaviridae family and Betacoronavirus genus.[8] It contains a positive-sense, single-stranded RNA genome, which codes structural proteins (such as S, E, M, and N genes) and non-structural proteins as well.[8,9] As an RNA virus, it has significant mutation capability, a factor that is important in the microbe's ability to escape host immune response and to adapt to different selection challenges.[10]

As of May 31, 2021, the World Health Organization "proposed labels for global SARS-CoV-2 variants of concern (VOCs) and variants of interest (VOIs) to be used alongside the scientific nomenclature in communications about variants to the public."[11] While in the case of VOCs, clear evidence is available indicating a significant impact on transmissibility, severity, and/or immunity that is likely to have an impact on the epidemiological situation, this evidence is still preliminary or is associated with major uncertainty among VOIs.[11] Some other variants of SARS-CoV-2 have been de-escalated based on at least one of the following criteria: "(1) the variant is no longer circulating, (2) the variant has been circulating for a long time without any impact on the overall epidemiological situation, (3) scientific evidence demonstrates that the variant is not associated with any concerning properties."[11] Since no SARS-CoV-2 variants are designated as VOIs currently, Figure 1 shows the main characteristics of VOCs as well as de-escalated variants.

Understanding the genetic and structural characteristics of the virus is an important factor in the evaluation of how large a threat the SARS-CoV-2 represents (Figure 2). It is also already known that more than 70% of zoonotic emerging infectious diseases in humans are caused by pathogens that have a wildlife origin.[15] Many characteristics of coronaviruses, e.g., large genomes, predisposition to mutation, and frequent recombination events have led to a diversity of strains and species that are capable of rapid adaptation to new hosts and ecologic environments.[15]

Valencak et al. have pointed out that genome sequencing showed 96% concordance between human SARS-CoV-2 virus and SARS-CoV-like strains isolated from bats strongly confirming that SARS-CoV-2 originates from bats as primary hosts.[16] Moreover, the authors draw attention that infected (companion) animals are also potentially able to spread new strains of SARS-CoV-2 to other people and pets in the household. However, several species of companion animals, farmed animals, and captive wild animals got infected with SARS-CoV-2 after having contact with asymptomatic or symptomatic humans.

In line with the above statements, a recent—not yet peer-reviewed—Hong Kong study found genetic evidence that Syrian hamsters (Mesocricetus auratus) kept in a local pet shop were responsible for a coronavirus disease 2019 (COVID-19) outbreak, which has so far infected at least five people.[17]

Hamsters are only the second animal proved to be able to infect humans so far. In late 2020, small outbreaks of COVID-19 among farmers in Denmark and the Netherlands were linked to farmed mink (Neovision vision).[18,19] In these outbreaks, hamsters and mink were initially infected by other, COVID-19–positive employees triggering a vicious circle of zoonosis and reverse zoonosis.[17-20]

Summarizing the characteristics of SARS-CoV-2 presented above, and if we accept the natural origin of the virus, these questions still remain: can SARS-CoV-2 become a potent biological weapon? Which properties determine its potential? What scenarios can represent a real-life possibility of SARS-CoV-2 weaponization?

MATERIALS AND METHODS

In order to adequately evaluate the threat SARS-CoV-2 represents as a biological weapon, we utilized the bioweapon risk assessment tool (BRAT) proposed by Theodore J. Cieslak et al. in an article published in 2018.[21] In the original article, the authors performed a survey among bioweapon experts, ranking the analyzed bioweapon agents based on 12 different criteria. As SARS-CoV-2 is a relatively newly identified virus, some of its main attributes are not well known, or at least are still under intensive research. Because of this, we decided that instead of creating a questionnaire, we will perform a focused literature search, trying to collect the most recent data we can rely on to complete the scoring. We utilized the PubMed search engine to identify relevant publications, using "SARS-CoV-2" and "COVID-19" keywords, combined with keywords related to the 12 bioweapon criteria (infectivity; infection-to-disease ratio; predictability and incubation period; morbidity and mortality; ease of large-scale production, storage; aerosol stability; environmental stability; ease of dispersal; communicability; prophylactic countermeasure availability; therapeutic countermeasure availability; and ease

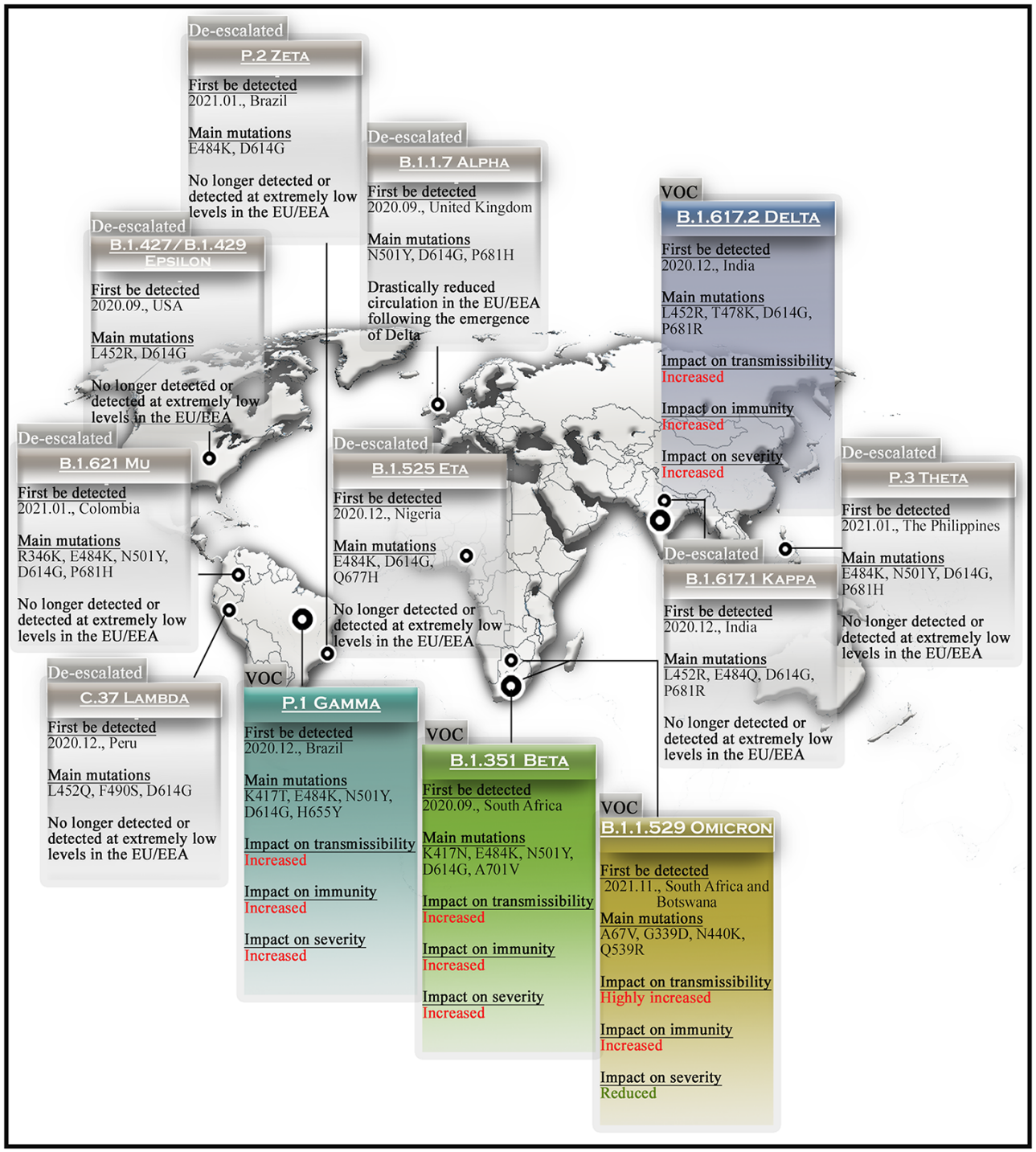

FIGURE 1. Variants of concern and de-escalated variants of SARS-CoV-2; note that VOCs according to the U.S. government SARS-CoV-2 Interagency Group classification are Delta (B.1.617.2 and AY lineages) and Omicron (B.1.1.529 and BA lineages), while Beta (B.1.351), Gamma (P.1), Delta (B.1.617.2 and AY lineages), and Omicron (B.1.1.529 and BA lineages) in the European Union/European Economic Area.[11,12] (Figure based on the modified world map originally created by Petr Dlouhý; original work available at: https://commons.wikimedia.org/wiki/File:A_large_blank_world_map_with_oceans_marked_in_blue.svg.)

of detection). In light of the strength level of evidence, where available, we looked for reviews and meta-analyses. Based on the collected information, the SARS-CoV-2 properties were quantified on a 0–3 Likert scale, where 0 represented the lowest, 3 the highest related to bioweapon potential.

RESULTS

Infectivity

To this date, the infectivity of the SARS-CoV-2 virus has not been measured in humans within validated experimental

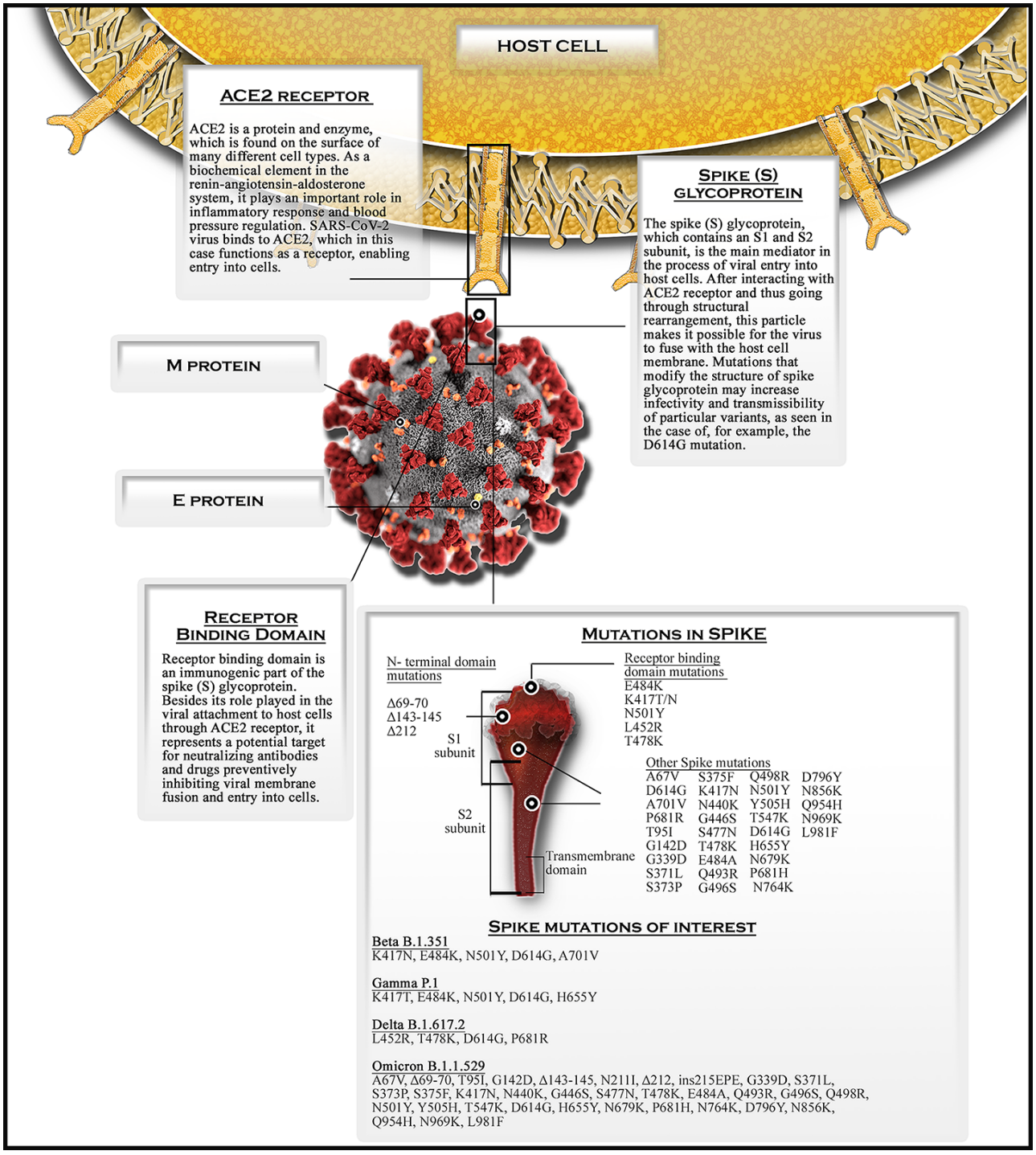

FIGURE 2. Illustrates highly mutable structural elements that facilitate the penetration into host cells. While these mutations are found in relatively low numbers in variants Beta, Gamma, and Delta, variant Omicron carries much more of them, contributing to a significant increase in infectivity, transmissibility, and immune escape.[11,13,14] (Figure based on the modified model originally created by Alissa Eckert, MSMI and Dan Higgins, MAMS; original work available at: https://phil.cdc.gov/Details.aspx?pid=23313.)

conditions. Available literature data are based upon statistical analyses, animal study models, and estimations connected to similar, previously measured (or estimated) pathogens. To quantify infectivity, the original scoring system in the bioweapon assessment tool uses the ID50 number.[21] This represents the number of pathogens that are needed to infect 50% of a given susceptible population.[22] Infectivity is influenced not just by the properties of the pathogen, and the target host, but also by the route of transmission as well: this means that, for example, intranasal inoculation will not

produce the same ID50 result as an aerosol-based infection.[23] If we accept the possible similarity between human influenza viruses, the SARS-CoV-1, Middle East respiratory syndrome virus, and SARS-CoV-2, the estimated ID50 value can be quantified somewhere between 100 and 1,000 particles.[22,23] This means that the SARS-CoV-2 is a moderately infectious agent, achieving a bioweapon risk assessment tool (BRAT) score of 2.

Infection-to-Disease Ratio

In BRAT, the reliability of a potential bioweapon is based on its infection-to-disease ratio. Related to SARS-CoV-2, international literature provides wide-scale data on this topic, which is not surprising in light of that more than 300 million laboratory-confirmed infected cases occurred worldwide. However, it is not easy to assign a single number to the infection-to-disease ratio, as it is highly variable among different subpopulations, for example multimorbidity, or even age can significantly influence the course of the infection. Another limiting factor is that even if common signs and symptoms are missing, the manifestation of subclinical tissue or organ damage is still a possibility.[24]

During the outbreak on the aircraft carrier U.S.S. Theodore Roosevelt, 43% of laboratory-confirmed patients never developed any sign of infection during the clinical course.[25] A meta-analysis published in the summer of 2021 estimated the asymptomatic percentage as 35.1%–36.9%.[26] These numbers put the SARS-CoV-2 virus in the high category of the infection-to-disease ratio, as much more than 1 individual out of 10 will show signs and symptoms of the COVID-19 disease, achieving a score of 2 on the relevant BRAT criterion.

Predictability and Incubation Period

The predictability or incubation period criterion in the original BRAT scoring system does not provide a well-quantified guideline and only establishes the following categories: very low ("0 score, incubation period very lengthy, and/or variable"); low (1 score); medium (2 score); high ("3 score, incubation period short, and/or very predictable").[21] If perpetrators want to deploy a biological weapon, it is understandable that in most scenarios, shorter or more predictable incubation period will be more beneficial in achieving desired goals (e.g., inducing public panic, and overflowing health care providers in a shorter time), and also planning the operation can be easier. But it should also be considered that in some cases, where the main goal is to infect as many people as possible, meanwhile also avoiding detection, a longer, supposedly asymptomatic incubation period could perform better. The incubation period will also determine the necessary quarantine and restriction of movement-type precautions.

However, terms like "lengthy and variable" without any further specific definition can be interpreted variously. SARS-CoV-2, according to a meta-analysis published by Cheng et al., has an average incubation period of 6–7 days (data ranging from 1 to 34 days).[27] If we consider that toxins like ricin can cause symptoms (depending on the route of transmission) a few hours after exposure, and for example anthrax can have an incubation period of 1 day up to 2 months, we can safely assume that SARS-CoV-2 has a medium predictability and incubation period, achieving a score of 2 on BRAT.

Morbidity and Mortality

In the case of morbidity and mortality, the relevant BRAT criterion provides a relatively straightforward guideline. However, it is important to note that morbidity and mortality are variable among available studies, and different definitions and assessment methods can lead to the overall confusion. We can relatively safely state that SARS-CoV-2 has significant virulence, as it can cause serious illness in a significant proportion of patients, mainly by affecting the respiratory system.[28] The virus' morbidity and mortality are influenced by its mutations, as variants can have different properties; for example, variant of concern 202012/1 (Alpha variant) is highly probable to have an increased mortality risk compared to wild-type SARS-CoV-2.[29] It is also important to mention that performing an autopsy, combined with adequate postmortem microbiological and histological sampling, is the most reliable method to determine the correlation between virus infection and the cause of death. In a study published recently from Hungary, based on 100 full-scale autopsy cases in the first and second wave of the pandemic, the cause of death showed strong association with SARS-CoV-2 infection in 57% of the cases, in 27% SARS-CoV-2 infection contributed to the course of death, and in 16% of the cases, only weak association was found.[30] This finding can be translated as not every SARS-CoV-2 infected patient will die directly because of the infection. To complicate things even further, we can also assume that a number of strongly associated COVID-19 death cases remain undetected because the infection is not explored or autopsy is not performed. Overall, various reviews and meta-analyses estimate the case fatality rate of the virus between 1% and 10%.[31-33] These numbers are arguable, but even the lower end of 1% represents a significant potential bioweapon attribute. In our opinion, summarizing the aforementioned, the virus deserves two points on BRAT.

Ease of Large-Scale Production and Storage

In this category, again, it is somewhat hard to objectively assess the risk SARS-CoV-2 represents. What quantity does count as "large-scale"? A few grams of most bioweapon microbes, with an effective dispersal method, could be enough to infect hundreds or even thousands of people. To induce public panic, or reach better defined operational goals, most terrorists would not need to have access to tons of bioweapon agents. Of course, we should not forget that without adequate safety precautions, it is very hard to cultivate a pathogen agent. Working with isolated, living SARS-CoV-2 requires biosafety level 3 criteria according to most recommendations.[34]

As a virus, SARS-CoV-2 needs cell lines to be cultivated effectively. Some of the available cell lines are of human origin, and others are of animal origin.[34] For example, Vero E6 is an easily accessible solution, with well-detailed descriptions regarding maintenance and growing.[35-37] Logically, another indirect fact that can strengthen the possibility of large-scale production is that there are ongoing live attenuated virus vaccine projects, which could be unimaginable without effective cultivation methods.[38,39] The aforementioned circumstances, in our opinion, are enough to give a 3 score on the relevant BRAT criterion.

Aerosol Stability, Environmental Stability, and Communicability

The BRAT criteria related to aerosol stability, environmental stability, and communicability are correlating closely in the case of SARS-CoV-2, making it easier to evaluate the three categories together. According to available literature, it is suggested that the virus can form viable aerosols, at least under experimental conditions, with a half-life of 1 h, and living aerosolized viral particles detectable up to a day.[40,41] This also creates the possibility for the virus to infect people via droplet nuclei, a theory not yet confirmed in an undebatable way. However, evidence suggests that besides infections occurring after contacting with infectious droplets, aerosols can also have an important role in the transmission of the disease.[40,42] Of course, environmental conditions largely influence the viability of aerosols: temperature, humidity, and UV light can play an important role in the survival of the virus.[43] Overall, if we calculate with the "worst-case scenario" in the category of aerosol stability and communicability, we can give a score of 3 in both to the virus.

Environmental stability also determines the bioweapon potential of SARS-CoV-2. Naturally, not only aerosol stability is defined by environmental factors, but also viable virus quantity in droplets. Based on one of the early publications about SARS-CoV-2 environmental resilience and survivability, the virus can survive on different inanimate surfaces, like plastic or stainless steel up to 72 h.[44] A more recent systematic review on the topic found that SARS-CoV-2 can survive up to 28 days under laboratory conditions and room temperature, on glass, steel, and both polymer and paper banknotes.[45] Comparing these findings to the infamously resilient anthrax spores, which can remain contagious for years, we can safely give a score of 2 on the relevant BRAT criterion, meaning a moderate, but not extreme environmental stability.

Ease of Dispersal

This is again an attribute which cannot be evaluated easily. No direct public data are available on dispersal weaponization efforts related to SARS-CoV-2. The BRAT criterion proposes the following categories: "0 – Virtually impossible to disperse in quantity; 1 – Low (requires sophisticated stabilization, aerobiology, and dispersal techniques); 2 – Moderate (requires spray techniques); 3 – High (can survive dissemination via ballistic weaponry)."[21] Considering the data mentioned under the previous section and accepting theories regarding the aerosol transmission potential of the virus, we can assume that with adequate spraying technique utilization, it could be dispersed in large quantities. We cannot be sure, if viral particles could survive a trauma like dissemination via ballistic weaponry; however, evidence suggests that the virus has significant mechanical resilience, a property which could make less "traumatizing" means of dispersal possible.[46] According to these findings, SARS-CoV-2 reaches a 2 score on the BRAT criterion.

Prophylactic Countermeasure Availability

When the first vaccines appeared in late 2020, there was hope that the pandemic could come to an end in the foreseeable future. This hope, however, have since faded, as antivaccination movements and breakthrough infections, mainly related to newer and newer VOCs, emerged. Antivaccination movements are also recognized as a factor increasing vulnerability to biological warfare events, according to a recent publication.[47] Nevertheless, in an increasing number of countries, and for increasing number of subpopulation (e.g., health care workers and armed forces personnel), vaccination becomes obligatory as time passes. With the widening selection of available vaccines, and more and more strict internal and international regulations, the hope of prophylactic countermeasures solving the pandemic is again on the horizon.[48] But we should not forget that VOCs can arise anywhere and can undermine vaccination efforts with causing breakthrough infections.[49] Another aspect worth mentioning is that relatively slowly progressing vaccination programs, not reaching goals like herd immunity fast enough, place a significant selection pressure on the virus, creating a possibility of resistance mechanisms like mutations to appear more frequently.

Summarizing, prophylactic countermeasures are readily available in most countries but, because of the aforementioned difficulties, are not a universal and solely working solution for the pandemic, giving a score of 1 on the BRAT criterion to the SARS-CoV-2 virus.

Therapeutic Countermeasure Availability

Opposite to prophylactic countermeasures, in the field of adequate therapy, our options are much more limited. From time to time, randomized controlled trials dismissed the efficacy of majority of agents. Most of the antiviral, immunomodulatory, and anti-inflammatory agents (with the notable exception of corticosteroids) could not live up to the long-term expectations.[50] Despite of anticoagulant therapy, in postmortem specimens, micro- and macrothrombi still represent a frequent finding.[30] While the lack of efficient therapeutic agents could somewhat undermine weaponization efforts in the eyes of potential perpetrators, in order to avoid unintended losses, fanatic bioterrorists truly determined to a cause would not be

TABLE I. The Bioweapon Risk Assessment Tool Categories and SARS-CoV-2[21]

Score Category	0	1	2	3	SARS-CoV-2
Infectivity	Noninfectious	Mildly infectious (ID50 > 1,000 organisms)	Moderately infectious (ID50 10–1,000 organisms)	Highly infectious (ID50 1–10 organisms)	2
Infection-to-disease ratio (reliability)	Low (fewer than one case of clinically relevant disease for every 100 infected individuals)	Moderate (1 case in 10 to 1 case in 100 infected individuals)	High (greater than 1 case in 10 infected individuals)	Certain (nearly all infected individuals develop clinically relevant disease)	2
Predictability (and incubation period)	Very low (incubation period very lengthy and/or variable)	Low	Medium	High (incubation period short and/or very predictable)	2
Morbidity and mortality (virulence)	Minimal	Low (incapacitating agents)	Medium (high morbidity and/or some degree of mortality)	High (lethal agents)	2
Ease of large-scale production and storage	Nearly impossible to cultivate in quantity	Difficult (requires embryos or other living systems for cultivation)	Moderate (can be produced in cells via genetic techniques)	Easy (can be propagated efficiently in artificial media)	3
Aerosol stability	Very low (impossible to formulate in a homogenous aerosol)	Low	Moderate	High (can be formulated in a homogenous aerosol of 2–3-μm particles)	3
Environmental stability	Very low (decay rates of unstabilized organism in the environment >3%/min)	Low	Moderate	High (relatively impervious to decay under normal atmospheric conditions)	2
Ease of dispersal	Virtually impossible to disperse in quantity	Low (requires sophisticated stabilization, aerobiology, and dispersal techniques)	Moderate (requires spray techniques)	High (can survive dissemination via ballistic weaponry)	2
Communicability	Noncontagious	Contagious via contact only	Contagious via respiratory droplets	Contagious via droplet nuclei	3
Prophylactic countermeasure availability	Countermeasures readily available or unnecessary	Antibiotics and/or vaccines readily acquired (most bacteria)	Vaccines may be producible given adequate time; antibiotics ineffective (most viruses)	No known countermeasures available (e.g., filoviruses)	1
Therapeutic countermeasure availability	Countermeasures readily available or unnecessary	Antibiotics readily acquired (most bacteria)	Antibiotics ineffective or generally unavailable (most viruses)	No known countermeasures available (e.g., filoviruses)	2
Ease of detection	Point-of-care assays available	Laboratory assays available	Special laboratory capabilities required	No assays available for detection	0
Total score					24/36

frightened off by this. Because we only have some promising new drugs, but no proven specific therapeutic countermeasure, in this category, SARS-CoV-2 deserves a score of 2 on BRAT.

Ease of Detection

Maybe this is the only field, where breakthrough has relatively rapidly been achieved during the battle against the pandemic. With the wide-scale availability of rapid antigen tests, the increasing speed and capacity of polymerase chain reaction examinations, detecting the presence of the virus is challenging only in a minority of cases.[51] But we must not forget about the possibility that emerging VOCs may show different antigens, decreasing the value of rapid antigen tests not optimized for new variants. Furthermore, rapid tests should only come from a reliable manufacturer in order to avoid false results. Overall, in this category, SARS-CoV-2 does not represent a significant threat, achieving a 0 score on BRAT.

DISCUSSION

According to our analysis, SARS-CoV-2 could become a bioweapon candidate in the future. It achieved a total score of 24 out of 36 on the bioweapon risk assessment criteria (Table I). Because of the method used to qualify and quantify

the attributes of the virus, our results are not directly comparable to the original BRAT validation study; nevertheless, the awareness of experts and decision makers should be raised toward the possibility of the COVID-19 disease arising as a bioweapon agent.

Because of newly emerging variants of SARS-CoV-2, the scoring we hereby presented can change over time. Bioterrorists most probably could get interested in variants that have increased transmissibility and severity; trying to further augment these characteristics through genetic engineering is also a possibility. If made available, asymptomatic carriage, combined with occult tissue damage, could also serve bioterrorism purposes. The above-mentioned issues further justify why monitoring of variants, particularly with unusual symptoms, should be thoroughly carried out.

With the increasing number of vaccinated people, the selection pressure is increasing on the virus. However, we also should not forget about that SARS-CoV-2, as mentioned in the introduction, can also survive in animal hosts, making zoonosis and even reverse zoonosis possible. This could present opportunity for new variants to show up even after achieving herd immunity in local human populations, and also an unconventional way for bioterrorists to "hide and preserve" collected viral strains. Keeping these in mind, regular monitoring of animal reservoirs potentially harboring SARS-CoV-2, especially rodents and other species with high reproductive rates, in highly urbanized territories could be necessary in the future.

The pandemic showed that besides antivaccination movements, other factors can also undermine the battle against the virus. One of the identified vulnerabilities is personal protective equipment shortage, which was a main problem mostly in the early phase of the pandemic.[47] This finding, in our opinion, should also be under consideration to complement the BRAT. The quality and quantity of personal protective equipment required to work safely under the threat of a particular biological agent is an essential question in many aspects. From the aspect of economy, personal protective equipments (PPEs) can be expensive, and not always readily available in large quantities. Another aspect is that if not enough PPEs are available, the most important service members (e.g., health care providers, first responders like ambulance servicemen, armed forces personnel) will be at increased risk of infection, which can lead to the escalation of the situation rapidly. It is also important to note that higher-level PPE usage requires training, again an attribute which can influence the potential of a bioweapon: a pathogen that requires higher level, more expensive PPE limits the options of first responders and other servicemen in a greater way, ergo represents greater burden. We suggest a scale where 0 represents minimal PPE requirement (e.g., surgical mask, with latex gloves), 1 represents PPE that requires minimal training or fit test to use (e.g., FFP3 half masks), 2 represents medium PPE requirement (e.g., higher-level respiration protection combined with more expensive overalls and gloves), and 3 represents higher-level PPE requirement (e.g., PPE that is expensive and requires intensive training to be able to work with).

The SARS-CoV-2 pandemic also showed that, besides economic consequences, public order and morale are largely influenced by quarantine regulations, restriction of movement, and public lockdowns. A possible goal of future bioterrorist attacks could be to incite "revolts" against government-issued lockdowns, a threat that could put pressure on decision makers during long-term negotiations. In our opinion, this category should also be considered to be a part of the BRAT. Agents that do not require large-scale quarantine regulations should be considered a moderate threat, compared to microbes that more probably require significant lockdowns. This category could also include the epidemic or pandemic generating potential of the virus, an important driver of restrictions. In this new scale, 0 score represents no quarantine requirement, 1 represents local or short-term restrictions (e.g., restrictions limited to a few buildings or for just a few days), 2 represents moderate restrictions (e.g., regional restrictions of movement or quarantine longer than a week, but shorter than a month), and 3 represents serious quarantine and lockdown regulations (e.g., whole country lockdown needed or international regulations in effect).

As a final addition to BRAT, a criterion that measures overall disruptive potential that is based on previous experiences with a particular agent should be considered for inclusion: 0—no previous experience with agent, only theoretical threat; 1—minor disruptive potential (e.g., outbreak contained in short time, with local resources); 2—significant disruptive potential (e.g., control of outbreak required national resources and caused significant organizational/economic losses); 3—high disruptive potential (e.g., international efforts required for containing the situation).

CONCLUSION

To our knowledge, this is the first time a systematic analysis was carried out related to the SARS-CoV-2 virus as a potential bioweapon. In light of the still ongoing pandemic, the possibility of SARS-CoV-2 getting into wrong hands is unfortunately real. We hope that our work contributed to better understanding the threat of this virus. Only time will tell whether SARS-CoV-2 will become a newcomer in the toolbar of bioterrorists or not. However, in our opinion, raising awareness and preparing for worst-case scenarios are always worth investments.

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CONFLICT OF INTEREST STATEMENT

None declared.

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Masks for COVID-19?

We all have an immune system that can fight and overcome any COVID-19 threat if its healthy and we nurture it. Humanity has survived naturally for untold thousands of years. Now suddenly billionaires, certain government officials and medical officers are demanding us to accept an experimental chemical shot with no demonstrated health benefit. What's in it for them? We must take control over our health as no one, is truly responsible for it – except us.

Now that you know the truth and the criminal deception perpetrated on us, what are you going to do about it?

Thank you for reading this open letter and letting me share my expertise. I ask that you share this with the public via media statement as we are all committed to promoting good health for all Canadians.

If you would like others to read this, please forward a donation of any amount to help with printing costs: maskbrochure@gmail.com.

If you have a question or comment, I would love to hear from you. I can best be reached: chris@safecom-inc.com.

Sincerely,

Chris Schaefer
Respirator Specialist
Edmonton, Alberta, Canada

Edmonton Respirator Expert Has Concerns – Updated

Re: Government Health Services mandate that all Canadians wear an N95 disposable, surgical or non-medical mask in public to reduce the likelihood of transmitting or developing a condition from the coronavirus - known as COVID-19.

I have been teaching and conducting respirator fit testing for over 20 years and now currently for my company SafeCom Training Services Inc. My clients include all levels of government, our military, healthcare providers, educational institutions and private industry. I am a published author and a recognized authority on this subject.

Respirator Masks Engineered for Breathing

The mandated disposable N95, surgical and non-medical masks are not actually by definition, even masks at all. Masks that cover mouth and nose must have engineered breathing openings that allow the easy flow of air in when we inhale and easy flow of air out when we exhale. Examples of masks include respirator masks, halloween masks, scuba masks and hockey goalie masks. Lacking engineered openings, the mandated closed cover, traps hazardously high concentrations of exhaled carbon dioxide thereby causing the restriction of available oxygen, which the wearer is forced to inhale. It is very hazardous to re-inhale your exhaled carbon dioxide. These covers that are mandated are simply – breathing barriers. I also refer to them as closed covers and instruments of self-suffocation.

Breathing Barriers Trap Carbon Dioxide and Lower Oxygen

By lacking engineered inhalation and exhalation valves – unlike a real respirator, these closed cover breathing barriers cause the wearer, exposure to high carbon dioxide and low oxygen levels that are rated as Immediately Dangerous to Life and Health (IDLH).

Normal carbon dioxide in air is approximately 400 PPM (parts per million). In April 2021, Health Canada set the indoor exposure limit to carbon dioxide at 1000 PPM. Residential indoor air quality guidelines: Carbon dioxide - Canada.ca I have personally measured carbon dioxide levels within two minutes of wearing at over 40,000 PPM. Normal Oxygen in air is 20.9%. I have personally measured oxygen levels within two minutes of wearing as low as 17.5%. What the ongoing effects of these hazardous air exposures will have on the wearers' health will vary. However, if I were to measure these exact same levels inside a confined space, in which workers were present, I would have to initiate an immediate evacuation alarm to get them out.

If hazardous air for yourself and your children isn't enough of a concern for you to ditch the breathing barrier, then I have a couple more good reasons for you.

Closed Covers Breed Harmful Bacteria

Besides trapping exhaled carbon dioxide and creating a low oxygen atmosphere, these breathing barriers also trap heat and moisture. I know you have been told that the cover catches droplets that stop virus transmission, however that is impossible as 99% of all viral particles are airborne and enter our eyes and pores of our skin just as easily as mouth and nose. They travel through the air and can stay airborne for hours, if not days, depending on size and air movements. It is impossible for any filtering respirator, much less a piece of cloth or paper fitted over your mouth and nose, to protect you or anyone else from viral transmission.

By trapping heat and moisture, the inside material of your cover stays warm and moist, which is the perfect environment for harmful bacteria to form, grow and multiply, right in front of your mouth and nose. These closed covers are all bacteria generators. What effect does this have in hospitals on patient infection and poor decision making by health care professionals? Does this bacteria generator increase the risk of patient infection? Does the forced low oxygen atmosphere caused by the closed cover contribute to the poor decisions made by health care professionals that result in 28,000 deaths in Canada every YEAR due to preventable medical errors? https://www.rcinet.ca/en/2019/10/28/thousands-die-from-medical-errors-yearly-notes-advocacy-group/

Trapping heat and moisture also causes the degradation of the material of the cover which can cause the user to inhale the chemicals and fibers used in the manufacture of the cover.

Our Children at Risk

Wearing a breathing barrier will only harm your health and especially your child's health. Why? Because children have a higher breathing rate than adults and require oxygen more frequently. Forcing your child to experience an oxygen deficient atmosphere is torture. https://www.dignity.dk/.../tortu.../torture-by-asphyxiation/ This does not include the forced chemical sanitizers our children our subject to in schools several times a day.

These sanitizers falsely called "hand" are poison. Type in the brand name and product name and the letters msds into an internet search to learn the truth. Anyone that has completed WHMIS training knows this. Common warnings regarding this product include: Wear gloves and goggles when handling. If skin contact occurs, flush with running water at least 15 mins. Remember, many chemicals, including sanitizer, can enter our blood and organs simply through skin absorption, the exact same way that nicotine and testosterone through a medication patch do.

Lastly, read the sanitizer label. It kills 99.99% of BACTERIA, not viruses. It has NO EFFECT on viruses. We have a lot of healthy bacteria in our bodies for digestion and other functions. What affect does this absorbed poison have on that?

So if breathing barriers and sanitizer cause us harm, despite what you have been told by Government Health Services, how are you supposed to protect your health? What about the age-old, tried, tested and proven method of a healthy diet, clean water, avoidance of man-made foods, plenty of fresh air, sunshine, moderate exercise, restful sleep, laughter and avoidance of stress?

June 22, 2020

Chris Schaefer
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Dr. Deena Hinshaw
Chief Medical Officer of Health
Alberta Health
Edmonton, AB
Deena.Hinshaw@gov.ab.ca

Open Letter to Physicians and the Public of Alberta

Dear Dr. Hinshaw,

Re: Alberta Health recommendation that Albertans wear N95, surgical or non-medical masks in public to reduce the likelihood of transmitting or developing a condition from the coronavirus known as COVID-19

I have been teaching and conducting respirator fit testing for over 20 years and now currently for my company SafeCom Training Services Inc. My clients include many government departments, our military, healthcare providers with Alberta Health Services, educational institutions and private industry. I am a published author and a recognized authority on this subject.

Filter respirator masks, especially N95, surgical and non-medical masks, provide negligible COVID-19 protection for the following reasons:

1. Viruses in the fluid envelopes that surround them can be very small, so small in fact that you would need an electron microscope to see them. N95 masks filter 95% of particles with a diameter of 0.3 microns or larger. COVID-19 particles are .08 - .12 microns.

2. Viruses don't just enter us through our mouth and nose, but can also enter through our eyes and even the pores of our skin. The only effective barrier one can wear to protect against virus exposure would be a fully encapsulated hazmat suit with cuffs by ankles taped to boots and cuffs by wrists taped to gloves, while receiving breathing air from a self-contained breathing apparatus (SCBA).

This barrier is standard gear to protect against a biohazard (viruses) and would have to be worn in a possible virus hazard environment 24/7 and you wouldn't be able to remove any part of it even to have a sip of water, eat or use the washroom while in the virus environment. If you did, you would become exposed and would negate all the prior precautions you had taken.

3. Not only are N95, surgical and non-medical masks useless as protection from COVID-19, but in addition, they also create very real risks and possible serious threats to a wearer's health for the following reasons:

A. Wearing these masks increases breathing resistance, making it more difficult to both inhale and exhale. According to our Alberta government regulations on respirator (mask) use, anyone that is required to wear a respirator mask should be screened to determine their ability to safely wear one.

Any covering of the mouth and nose increases breathing resistance, whether the mask is certified or not. Those individuals with pre-existing medical conditions of shortness of breath, lung disease, panic attacks, breathing difficulties, chest pain in exertion, cardiovascular disease, fainting spells, claustrophobia, chronic bronchitis, heart problems, asthma, allergies, diabetes, seizures, high blood pressure and pacemakers need to be pre-screened by a medical professional to be approved to be able to safely wear one. Wearing these masks could cause a medical emergency for anyone with any of these conditions.

Pregnancy-related high blood pressure is possible. More research is necessary to determine the impact of wearing a mask for extended periods of time on pregnancy.

It is dangerous to recommend, much less mandate anyone with medical conditions to wear a mask without educating them about the risks involved in wearing them without having been pre-screened and approved by a medical professional first.

B. In order for any respirator mask to offer protection to a specific user, that user must be individually fitted with the right type, right size, if male – face must be clean shaven (only short moustache allowed). Next, the user

must be fit tested with that respirator by a trained professional to determine whether or not the respirator is providing the user with an air-tight seal – a requirement for any respirator mask.

C. N95 masks – N for not resistant to oil particles, 95 for the percentage of protection – the lowest level of all respirator masks

These masks even when properly sized and fitted will not protect against virus exposure, however they are capable of adequate protection from larger particles such as pet dander, pollen and sawdust.

Surgical masks (the paper ones that loop around the ears) – do not seal to the face and do not filter anything.

Nonmedical and/or homemade masks are dangerous because:

- Not engineered for the efficient yet protective requirements of easy inhalation and effective purging of exhaled carbon dioxide
- Could cause an oxygen deficiency for the user
- Could cause an accumulation of carbon dioxide for the user
- Shouldn't be recommended under any circumstance

D. They increase body temperature and physical stress – could cause a high temperature alert on a thermometer gun

E. They impede verbal communication

F. N95, surgical and nonmedical masks can create infections and possible disease all by themselves by causing exhaled warm, moist air to accumulate on the inside material of the mask, right in front of the user's mouth and nose, which is the perfect environment for bacteria to form, grow and multiply. That is why N95 and other disposable masks were only designed to be short duration, specific task use and then immediately discarded.

So if masks are not effective in preventing illness, what is? How about the age-old tried, tested and proven method of protecting our health with a healthy diet, clean water, avoidance of processed, junk and fast foods, plenty of fresh air, sunshine, moderate exercise, adequate restful sleep and avoidance of stress?

We all have an immune system that can fight and overcome any COVID-19 threat if it is healthy and we nurture it.

Thank you for reading this open letter and letting me share my expertise. I ask that you share this with the public via media statement as we are all committed to promoting good health for all Albertans. If you or any of the public wish to contact me with a question or comment, I would love to hear from you. I can best be reached chris@safecom-inc.com.

Sincerely,

Chris Schaefer
Director
SafeCom Training Services Inc.

More Than 400 Studies on the Failure of Compulsory Covid Interventions (Lockdowns, Restrictions, Closures)

November 30, 2021

Bendavid reported “in the framework of this analysis, there is no evidence that more restrictive nonpharmaceutical interventions (‘lockdowns’) contributed substantially to bending the curve of new cases in England, France, Germany, Iran, Italy, the Netherlands, Spain, or the United States in early 2020.” We’ve known this for a very long time now but governments continue to double down, causing misery upon people with ramifications that will likely take decades or more to repair.

The benefits of the societal lockdowns and restrictions have been totally exaggerated and the harms to our societies and children have been severe: the harms to children, the undiagnosed illness that will result in excess mortality in years to come, depression, anxiety, suicidal ideation in our young

people, drug overdoses and suicides due to the lockdown policies, the crushing isolation due to the lockdowns, psychological harms, domestic and child abuse, sexual abuse of children, loss of jobs and businesses and the devastating impact, and the massive numbers of deaths resulting from the lockdowns that will impact heavily on women and minorities.

Now we have whispers again for the new lockdowns in response to the Omicron variant that, by my estimations, will be likely infectious but not more lethal.

How did we get here? We knew that we could never eradicate this mutable virus (that has an animal reservoir) with lockdowns and that it would likely become endemic like other circulating common cold coronaviruses. When we knew an age-risk stratified approach was optimal (focused protection as outlined in the Great Barrington Declaration) and not carte blanche policies when we had evidence of a 1,000-fold differential in risk of death between a child and an elderly person. We knew of the potency and success of early ambulatory outpatient treatment in reducing the risk of hospitalization and death in the vulnerable.

It was clear very early on that Task Forces and medical advisors and decision-makers were not reading the evidence, were not up to speed with the science or data, did not understand the evidence, did not 'get' the evidence, and were blinded to the science, often driven by their own prejudices, biases, arrogance, and ego. They remain ensconced in sheer academic sloppiness and laziness. It was clear that the response was not a public health one. It was a political one from day one and continues today.

A recent study (pre-print) captures the essence and catastrophe of a lockdown society and the hollowing out of our children by looking at how children learn (3 months to 3 years old) and finding across all measures that "children born during the pandemic have significantly reduced verbal, motor, and overall cognitive performance compared to children born pre-pandemic." Researchers also reported that "males and children in lower socioeconomic families have been most affected. Results highlight that even in the absence of direct SARS-CoV-2 infection and COVID-19 illness, the environmental changes associated with the COVID-19 pandemic is significantly and negatively affecting infant and child development."

Perhaps Donald Luskin of the *Wall Street Journal* best captures what we have stably witnessed since the start of these unscientific lockdowns and school closures: "Six months into the Covid-19 pandemic, the U.S. has now carried out two large-scale experiments in public health—first, in March and April, the lockdown of the economy to arrest the spread of the virus, and second, since mid-April, the reopening of the economy. The results are in. Counterintuitive though it may be, statistical analysis shows that locking down the economy didn't contain the disease's spread and reopening it didn't unleash a second wave of infections."

The British Columbia Center for Disease Control (BCCDC) issued a full report in September 2020 on the impact of school closures on children and found para "that i) children comprise a small proportion of diagnosed COVID-19 cases, have less severe illness, and mortality is rare ii) children do not appear to be a major source of SARS-CoV-2 transmission in households or schools, a finding which has been consistent globally iii) there are important differences between how influenza and SARS-CoV-2 are transmitted. School closures may be less effective as a prevention measure for COVID-19 iv) school closures can have severe and unintended consequences for children and youth v) school closures contribute to greater family stress, especially for female caregivers, while families balance child care

and home learning with employment demands vi) family violence may be on the rise during the COVID pandemic, while the closure of schools and childcare centres may create a gap in the safety net for children who are at risk of abuse and neglect."

Now places like Austria (November 2021) have re-entered the world of lockdown lunacy only to be outmatched by Australia. Indeed, an illustration of the spurious need for these ill-informed actions is that they are being done in the face of clear scientific evidence showing that during strict prior societal lockdowns, school lockdowns, mask mandates, and additional societal restrictions, the number of positive cases went up!

The pandemic response today remains a purely political one.

What follows is the current totality of the body of evidence (available comparative studies and high-level pieces of evidence, reporting, and discussion) on COVID-19 lockdowns, masks, school closures, and mask mandates. There is no conclusive evidence supporting claims that any of these restrictive measures worked to reduce viral transmission or deaths. Lockdowns were ineffective, school closures were ineffective, mask mandates were ineffective, and masks themselves were and are ineffective and harmful.

Table 1: Evidence showing thatCOVID-19 lockdowns, use of face masks, school closures, and mask mandates were largely ineffective and caused crushing harms

Study/report title, author, and year published and interactive url link	Predominant study/evidence report finding
LOCKDOWNS	
1) Lockdown Effects on Sars-CoV-2 Transmission – The evidence from Northern Jutland, Kepp, 2021	"Analysis shows that while infection levels decreased, they did so before lockdown was effective, and infection numbers also decreased in neighbour municipalities without mandates…direct spill-over to neighbour municipalities or the simultaneous mass testing do not explain this…data suggest that efficient infection surveillance and voluntary compliance make full lockdowns unnecessary."
2) A country level analysis measuring the impact of government actions, country preparedness and socioeconomic factors on COVID-19 mortality and related health outcomes, Chaudhry, 2020	"Analysis was conducted to assess the impact of timing and type of national health policy/actions undertaken towards COVID-19 mortality and related health outcomes…low levels of national preparedness, scale of testing and population characteristics were associated with increased national case load and overall mortality….in our analysis, full lockdowns and wide-spread COVID-19 testing were not associated with reductions in the number of critical cases or overall mortality."
3) Full lockdown policies in Western Europe countries have no evident impacts on the COVID-19 epidemic, Meunier, 2020	"Extrapolating pre-lockdown growth rate trends, we provide estimates of the death toll in the absence of any lockdown policies, and show that these strategies might not have saved any life in western Europe. We also show that neighboring countries applying less restrictive social distancing measures (as opposed to police-enforced home containment) experience a very similar time evolution of the epidemic."
4) Effects of non-pharmaceutical interventions on COVID-19: A Tale of Three Models, Chin, 2020	"Inferences on effects of NPIs are non-robust and highly sensitive to model specification. Claimed benefits of lockdown appear grossly exaggerated."
5) vvvlrNPIs). In this way, it may be possible to isolate the role of mrNPIs, net of lrNPIs and epidemic dynamics.Here, we use Sweden and South Korea as the counterfac-tuals to isolate the effects of mrNPIs in5) Assessing mandatory stay-at-home and business closure effects on the spread of COVID-19, Bendavid, 2020	"Assessing mandatory stay-at-home and business closure effects on the spread of COVID-19…we do not find significant benefits on case growth of more restrictive NPIs. Similar reductions in case growth may be achievable with less-restrictive interventions.""After subtracting the epidemic and lrNPI effects, we find no clear, significant beneficial effect of mrNPIs on case growth in any country.""In the framework of this analysis, there is no evidence that more restrictive nonpharmaceutical interventions ('lockdowns') contributed substantially to bending the curve of new cases in England, France, Germany, Iran, Italy, the Netherlands, Spain or the United States in early 2020."

6) Effect of school closures on mortality from coronavirus disease 2019: old and new predictions, Rice, 2020	"We therefore conclude that the somewhat counterintuitive results that school closures lead to more deaths are a consequence of the addition of some interventions that suppress the first wave and failure to prioritise protection of the most vulnerable people.When the interventions are lifted, there is still a large population who are susceptible and a substantial number of people who are infected. This then leads to a second wave of infections that can result in more deaths, but later. Further lockdowns would lead to a repeating series of waves of infection unless herd immunity is achieved by vaccination, which is not considered in the model. A similar result is obtained in some of the scenarios involving general social distancing. For example, adding general social distancing to case isolation and household quarantine was also strongly associated with suppression of the infection during the intervention period, but then a second wave occurs that actually concerns a higher peak demand for ICU beds than for the equivalent scenario without general social distancing."
7) Was Germany's Corona Lockdown Necessary? Kuhbandner, 2020	"Official data from Germany's RKI agency suggest strongly that the spread of the corona virus in Germany receded autonomously, before any interventions become effective. Several reasons for such an autonomous decline have been suggested. One is that differences in host susceptibility and behavior can result in herd immunity at a relatively low prevalence level. Accounting for individual variation in susceptibility or exposure to the coronavirus yields a maximum of 17% to 20% of the population that needs to be infected to reach herd immunity, an estimate that is empirically supported by the cohort of the Diamond Princess cruise ship. Another reason is that seasonality may also play an important role in dissipation."
8) A First Literature Review: Lockdowns Only Had a Small Effect on COVID-19, Herby, 2021	"Lockdowns Only Had a Small Effect on COVID-19… studies which differentiate between the two types of behavioral change find that, on average, mandated behavioral changes accounts for only 9% (median: 0%) of the total effect on the growth of the pandemic stemming from behavioral changes. The remaining 91% (median: 100%) of the effect was due to voluntary behavioral changes."
9) Trajectory of COVID-19 epidemic in Europe, Colombo, 2020	"We show that relaxing the assumption of homogeneity to allow for individual variation in susceptibility or connectivity gives a model that has better fit to the data and more accurate 14-day forward prediction of mortality. Allowing for heterogeneity reduces the estimate of "counterfactual" deaths that would have occurred if there had been no interventions from 3.2 million to 262,000, implying that most of the slowing and reversal of COVID-19 mortality is explained by the build-up of herd immunity."

10) Modeling social distancing strategies to prevent SARS-CoV2 spread in Israel- A Cost-effectiveness analysis, Shlomai, 2020	"A national lockdown has a moderate advantage in saving lives with tremendous costs and possible overwhelming economic effects."
11) Lockdowns and Closures vs COVID – 19: COVID Wins, Bhalla, 2020	"As we have stressed throughout, a direct test of lockdowns on cases is the most appropriate test. This direct test is a before after test i.e. a comparison of what happened post lockdown versus what would have happened. Only for 15 out of 147 economies the lockdown "worked" in making infections lower; for more than a hundred countries, post lockdown estimate of infections was more than three times higher than the counter factual. This is not evidence of success – rather it is evidence of monumental failure of lockdown policy…"we also test, in some detail, the hypothesis that early lockdowns, and more stringent lockdowns, were effective in containing the virus. We find robust results for the opposite conclusion: later lockdowns performed better, and less stringent lockdowns achieved better outcomes." "For the first time in human history, lockdowns were used as a strategy to counter the virus. While conventional wisdom, to date, has been that lockdowns were successful (ranging from mild to spectacular) we find not one piece of evidence supporting this claim."
12) SARS-CoV-2 waves in Europe: A 2-stratum SEIRS model solution, Djaparidze, 2020	"Found that 180-day of mandatory isolations to healthy <60 (i.e. schools and workplaces closed) produces more final deaths…e mandatory isolations have caused economic damages and since these enforced isolations were sub-optimal they involuntarily increased the risk of covid-19 disease-related damages."
13) Government mandated lockdowns do not reduce Covid-19 deaths: implications for evaluating the stringent New Zealand response, Gibson, 2020	"Lockdowns do not reduce Covid-19 deaths. This pattern is visible on each date that key lockdown decisions were made in New Zealand. The apparent ineffectiveness of lockdowns suggests that New Zealand suffered large economic costs for little benefit in terms of lives saved."
14) Did Lockdown Work? An Economist's Cross-Country Comparison, Bjørnskov, 2020	"The lockdowns in most Western countries have thrown the world into the most severe recession since World War II and the most rapidly developing recession ever seen in mature market economies. They have also caused an erosion of fundamental rights and the separation of powers in a large part of the world as both democratic and autocratic regimes have misused their emergency powers and ignored constitutional limits to policy-making (Bjørnskov and Voigt, 2020). It is therefore important to evaluate whether and to which extent the lockdowns have worked as officially intended: to suppress the spread of the SARS-CoV-2 virus and prevent deaths associated with it. Comparing weekly mortality in 24 European countries, the findings in this paper suggest that more severe lockdown policies have not been associated with lower mortality. In other words, the lockdowns have not worked as intended."

15) Inferring UK COVID-19 fatal infection trajectories from daily mortality data: were infections already in decline before the UK lockdowns ?, Wood, 2020	“A Bayesian inverse problem approach applied to UK data on first wave Covid-19 deaths and the disease duration distribution suggests that fatal infections were in decline before full UK lockdown (24 March 2020), and that fatal infections in Sweden started to decline only a day or two later. An analysis of UK data using the model of Flaxman et al. (2020, Nature 584) gives the same result under relaxation of its prior assumptions on R.”
16) The 1illusory effects of non-pharmaceutical interventions on COVID-19 in Europe, Homburg, 2020	“We show that their methods involve circular reasoning. The purported effects are pure artefacts, which contradict the data. Moreover, we demonstrate that the United Kingdom’s lockdown was both superfluous and ineffective.”
17) Child malnutrition and COVID-19: the time to act is now, Fore, 2020	“The COVID-19 pandemic is undermining nutrition across the world, particularly in low-income and middle-income countries (LMICs). The worst consequences are borne by young children. Some of the strategies to respond to COVID-19—including physical distancing, school closures, trade restrictions, and country lockdowns—are impacting food systems by disrupting the production, transportation, and sale of nutritious, fresh, and affordable foods, forcing millions of families to rely on nutrient-poor alternatives.”
18) Covid-19 Mortality: A Matter of Vulnerability Among Nations Facing Limited Margins of Adaptation, De Larochelambert, 2020	“Countries that already experienced a stagnation or regression of life expectancy, with high income and NCD rates, had the highest price to pay. This burden was not alleviated by more stringent public decisions.”
19) Impact of non-pharmaceutical interventions against COVID-19 in Europe: A quasi-experimental study, Hunter, 2020	“Closure of education facilities, prohibiting mass gatherings and closure of some non-essential businesses were associated with reduced incidence whereas stay at home orders and closure of all non-businesses was not associated with any independent additional impact.”
20) Israel: thefatemperor, 2020	“Given that the evidence reveals that the Corona disease declines even without a complete lockdown, it is recommendable to reverse the current policy and remove the lockdown.”

21) Smart Thinking, Lockdown and COVID-19: Implications for Public Policy, Altman, 2020	"The response to COVID-19 has been overwhelmingly to lockdown much the world's economies in order to minimize death rates as well as the immediate negative effects of COVID-19. I argue that such policy is too often de-contextualized as it ignores policy externalities, assumes death rate calculations are appropriately accurate and, and as well, assumes focusing on direct Covid-19 effects to maximize human welfare is appropriate. As a result of this approach current policy can be misdirected and with highly negative effects on human welfare. Moreover, such policies can inadvertently result in not minimizing death rates (incorporating externalities) at all, especially in the long run… such misdirected and sub-optimal policy is a product of policy makers using inappropriate mental models which are lacking in a number of key areas; the failure to take a more comprehensive macro perspective to address the virus, using bad heuristics or decision-making tools, relatedly not recognizing the differential effects of the virus, and adopting herding strategy (follow-the-leader) when developing policy."
22) The Mystery of Taiwan, Janaskie, 2020	"Another fascinating outlier – often cited as a case in which a government handled the pandemic the correct way – was Taiwan. Indeed, Taiwan presents an anomaly in the mitigation and overall handling of the Covid-19 pandemic. In terms of stringency, Taiwan ranks among the lowest in the world, with fewer controls than Sweden and far lower than the U.S….The government did test at the border and introduce some minor controls but nowhere near that of most counties. In general, Taiwan rejected lockdown in favor of maintaining social and economic functioning." "Despite Taiwan's closer proximity to the source of the pandemic, and its high population density, it experienced a substantially lower-case rate of 20.7 per million compared with New Zealand's 278.0 per million. Rapid and systematic implementation of control measures, in particular effective border management (exclusion, screening, quarantine/isolation), contact tracing, systematic quarantine/isolation of potential and confirmed cases, cluster control, active promotion of mass masking, and meaningful public health communication, are likely to have been instrumental in limiting pandemic spread. Furthermore, the effectiveness of Taiwan's public health response has meant that to date no lockdown has been implemented, placing Taiwan in a stronger economic position both during and post-COVID-19 compared with New Zealand, which had seven weeks of national lockdown (at Alert Levels 4 and 3)."
23) What They Said about Lockdowns before 2020, Gartz, 2021	"While expert consensus regarding the ineffectiveness of mass quarantine of previous years has recently been challenged, significant present-day evidence continuously demonstrates that mass quarantine is both ineffectual at preventing disease spread as well as harmful to individuals."

24) Cost of Lockdowns: A Preliminary Report, AIER, 2020	"In the debate over coronavirus policy, there has been far too little focus on the costs of lockdowns. It's very common for the proponents of these interventions to write articles and large studies without even mentioning the downsides…a brief look at the cost of stringencies in the United States, and around the world, including stay-at-home orders, closings of business and schools, restrictions on gatherings, shutting of arts and sports, restrictions on medical services, and interventions in the freedom of movement."
25) Leaked Study From Inside German Government Warns Lockdown Could Kill More People Than Coronavirus, Watson, 2020 German Minister: Lockdown Will Kill More Than Covid-19 Does	"The lockdown and the measures taken by the German federal and central governments to contain the coronavirus apparently cost more lives, for example of cancer patients, than of those actually killed by it." "Half a million more will die from tuberculosis."
26) Evaluating the effects of shelter-in-place policies during the COVID-19 pandemic, Berry, 2021	"Previous studies have claimed that shelter-in-place orders saved thousands of lives, but we reassess these analyses and show that they are not reliable. We find that shelter-in-place orders had no detectable health benefits, only modest effects on behavior, and small but adverse effects on the economy."
27) Study: Lockdown "Will Destroy at Least Seven Times More Years of Human Life" Than it Saves, Watson, 2020	"A study has found that the "stay at home" lockdown order in the United States will "destroy at least seven times more years of human life" than it saves and that this number is "likely" to be more than 90 times greater… Research shows that at least 16.8% of adults in the United States have suffered "major mental harm from responses to Covid-19…Extrapolating these numbers out, the figures show that "anxiety from responses to Covid-19 has impacted 42,873,663 adults and will rob them of an average of 1.3 years of life, thus destroying 55.7 million years of life."
28) Four Stylized Facts about COVID-19, Atkeson, 2020	"Failing to account for these four stylized facts may result in overstating the importance of policy mandated NPIs for shaping the progression of this deadly pandemic… The existing literature has concluded that NPI policy and social distancing have been essential to reducing the spread of COVID-19 and the number of deaths due to this deadly pandemic. The stylized facts established in this paper challenge this conclusion."

29) THE LONG-TERM IMPACT OF THE COVID-19 UNEMPLOYMENT SHOCK ON LIFE EXPECTANCY AND MORTALITY RATES, Bianchi, 2021	"Policy-makers should therefore consider combining lockdowns with policy interventions meant to reduce economic distress, guarantee access to health care, and facilitate effective economic reopening under health care policies to limit SARS-CoV-19 spread…assess the long-run effects of the COVID-19 economic recession on mortality and life expectancy. We estimate the size of the COVID-19-related unemployment shock to be between 2 and 5 times larger than the typical unemployment shock, depending on race and gender, resulting in a significant increase in mortality rates and drop in life expectancy. We also predict that the shock will disproportionately affect African-Americans and women, over a short horizon, while the effects for white men will unfold over longer horizons. These figures translate in more than 0.8 million additional deaths over the next 15 years."
30) Lockdowns Do Not Control the Coronavirus: The Evidence, AIER, 2020	"The question is whether lockdowns worked to control the virus in a way that is scientifically verifiable. Based on the following studies, the answer is no and for a variety of reasons: bad data, no correlations, no causal demonstration, anomalous exceptions, and so on. There is no relationship between lockdowns (or whatever else people want to call them to mask their true nature) and virus control."
31) Too Little of a Good Thing A Paradox of Moderate Infection Control, Cohen, 2020	"The link between limiting pathogen exposure and improving public health is not always so straightforward. Reducing the risk that each member of a community will be exposed to a pathogen has the attendant effect of increasing the average age at which infections occur. For pathogens that inflict greater morbidity at older ages, interventions that reduce but do not eliminate exposure can paradoxically increase the number of cases of severe disease by shifting the burden of infection toward older individuals."
32) Covid Lockdown Cost/Benefits: A Critical Assessment of the Literature, Allen, 2020	"Generally speaking, the ineffectiveness of lockdown stems from voluntary changes in behavior. Lockdown jurisdictions were not able to prevent noncompliance, and non-lockdown jurisdictions benefited from voluntary changes in behavior that mimicked lockdowns. The limited effectiveness of lockdowns explains why, after one year, the unconditional cumulative deaths per million, and the pattern of daily deaths per million, is not negatively correlated with the stringency of lockdown across countries. Using a cost/benefit method proposed by Professor Bryan Caplan, and using two extreme assumptions of lockdown effectiveness, the cost/benefit ratio of lockdowns in Canada, in terms of life-years saved, is between 3.6–282. That is, it is possible that lockdown will go down as one of the greatest peacetime policy failures in Canada's history."

33) Covid-19: How does Belarus have one of the lowest death rates in Europe? Karáth, 2020	“Belarus’s beleaguered government remains unfazed by covid-19. President Aleksander Lukashenko, who has been in power since 1994, has flatly denied the seriousness of the pandemic, refusing to impose a lockdown, close schools, or cancel mass events like the Belarusian football league or the Victory Day parade. Yet the country’s death rate is among the lowest in Europe—just over 700 in a population of 9.5 million with over 73 000 confirmed cases.”
34) PANDA, Nell, 2020	“For each country put forward as an example, usually in some pairwise comparison and with an attendant single cause explanation, there are a host of countries that fail the expectation. We set out to model the disease with every expectation of failure. In choosing variables it was obvious from the outset that there would be contradictory outcomes in the real world. But there were certain variables that appeared to be reliable markers as they had surfaced in much of the media and pre-print papers. These included age, co-morbidity prevalence and the seemingly light population mortality rates in poorer countries than that in richer countries. Even the worst among developing nations—a clutch of countries in equatorial Latin America—have seen lighter overall population mortality than the developed world. Our aim therefore was not to develop the final answer, rather to seek common cause variables that would go some way to providing an explanation and stimulating discussion. There are some very obvious outliers in this theory, not the least of these being Japan. We test and find wanting the popular notions that lockdowns with their attendant social distancing and various other NPIs confer protection.”
35) States with the Fewest Coronavirus Restrictions, McCann, 2021	Graphics reveal no relationship in stringency level as it relates to the death rates, but finds a clear relationship between stringency and unemployment.
36) COVID-19 Lockdown Policies: An Interdisciplinary Review, Robinson, 2021	“Studies at the economic level of analysis points to the possibility that deaths associated with economic harms or underfunding of other health issues may outweigh the deaths that lockdowns save, and that the extremely high financial cost of lockdowns may have negative implications for overall population health in terms of diminished resources for treating other conditions. Research on ethics in relation to lockdowns points to the inevitability of value judgements in balancing different kinds of harms and benefits than lockdowns cause.”

37) Comedy and Tragedy in Two Americas, Tucker, 2021	"Covid unleashed a version of tyranny in the United States. Through a surreptitious and circuitous route, many public officials somehow managed to gain enormous power for themselves and demonstrate that all our vaunted limits on government are easily transgressed under the right conditions. Now they want to use that power to enact permanent change in this country. Right now, people, capital, and institutions are fleeing from them to safe and freer places, which only drives the people in power to madness. They are right now plotting to shut down the free states through any means possible."
38) Lockdowns Worsen the Health Crisis, Younes, 2021	"We suspect that one day, the quarantining of entire societies that was carried out in response to the coronavirus pandemic, leading to vast swaths of the population becoming unhealthier overall and ironically more susceptible to severe outcomes from the virus, will be seen as the 21st century version of bloodletting. As the epidemiologist Martin Kulldorff has observed, public health is not just about one disease, but all health outcomes. Apparently, in 2020, the authorities forgot this obvious truth."
39) The Damage of Lockdowns to Young People, Yang, 2021	"Biological and cultural reasons why young people, mostly referring to those under the age of 30, are particularly vulnerable to the isolation as well as lifestyle disruptions brought about by lockdowns… "Adults under 30 experienced the highest increase in suicidal thinking in the same period, with rates of suicidal ideation rising from 12.5% to 14% in people aged 18-29. For many of the young adults surveyed, these mental health challenges persisted into the summer, despite a loosening of restrictions."
40) Lifestyle and mental health disruptions during COVID-19, Giuntella, 2021	"COVID-19 has affected daily life in unprecedented ways. Drawing on a longitudinal dataset of college students before and during the pandemic, we document dramatic changes in physical activity, sleep, time use, and mental health. We show that biometric and time-use data are critical for understanding the mental health impacts of COVID-19, as the pandemic has tightened the link between lifestyle behaviors and depression."
41) CDC: A Quarter of Young Adults Say They Contemplated Suicide This Summer During Pandemic, Miltimore, 2020	"One in four young adults between the ages of 18 and 24 say they've considered suicide in the past month because of the pandemic, according to new CDC data that paints a bleak picture of the nation's mental health during the crisis. The data also flags a surge of anxiety and substance abuse, with more than 40 percent of those surveyed saying they experienced a mental or behavioral health condition connected to the Covid-19 emergency. The CDC study analyzed 5,412 survey respondents between June 24 and 30."

42) Global rise in childhood mental health issues amid pandemic, LEICESTER, 2021	“For doctors who treat them, the pandemic’s impact on the mental health of children is increasingly alarming. The Paris pediatric hospital caring for Pablo has seen a doubling in the number of children and young teenagers requiring treatment after attempted suicides since September.Doctors elsewhere report similar surges, with children — some as young as 8 — deliberately running into traffic, overdosing on pills and otherwise self-harming. In Japan, child and adolescent suicides hit record levels in 2020, according to the Education Ministry.”
43) Lockdowns: The Great Debate, AIER, 2020	“The global lockdowns, on this scale with this level of stringency, have been without precedent. And yet we have examples of a handful of countries and US states that did not do this, and their record in minimizing the cost of the pandemic is better than the lockdown countries and states. The evidence that the lockdowns have done net good in terms of public health is still lacking.”
44) COVID-19 containment policies through time may cost more lives at metapopulation level, Wells, 2020	“Show that temporally restricted containment efforts, that have the potential to flatten epidemic curves, can result in wider disease spread and larger epidemic sizes in metapopulations.”
45) The Covid-19 Emergency Did Not Justify Lockdowns, Boudreaux, 2021	“Yet there was no such careful calculation for the lockdowns imposed in haste to combat Covid-19. Lockdowns were simply assumed not only to be effective at significantly slowing the spread of SARS-CoV-2, but also to impose only costs that are acceptable. Regrettably, given the novelty of the lockdowns, and the enormous magnitude of their likely downsides, this bizarrely sanguine attitude toward lockdowns was – and remains – wholly unjustified.”
46) Death and Lockdowns, Tierney, 2021	“Now that the 2020 figures have been properly tallied, there’s still no convincing evidence that strict lockdowns reduced the death toll from Covid-19. But one effect is clear: more deaths from other causes, especially among the young and middle-aged, minorities, and the less affluent.The best gauge of the pandemic’s impact is what statisticians call “excess mortality,” which compares the overall number of deaths with the total in previous years. That measure rose among older Americans because of Covid-19, but it rose at an even sharper rate among people aged 15 to 54, and most of those excess deaths were not attributed to the virus.”

47) The COVID Pandemic Could Lead to 75,000 Additional Deaths from Alcohol and Drug Misuse and Suicide, Well Being Trust, 2021	"The brief notes that if the country fails to invest in solutions that can help heal the nation's isolation, pain, and suffering, the collective impact of COVID-19 will be even more devastating. Three factors, already at work, are exacerbating deaths of despair: unprecedented economic failure paired with massive unemployment, mandated social isolation for months and possible residual isolation for years, and uncertainty caused by the sudden emergence of a novel, previously unknown microbe…the deadly impact of lockdowns will grow in future years, due to the lasting economic and educational consequences. The United States will experience more than 1 million excess deaths in the United States during the next two decades as a result of the massive "unemployment shock" last year… lockdowns are the single worst public health mistake in the last 100 years," says Dr. Jay Bhattacharya, a professor at Stanford Medical School. "We will be counting the catastrophic health and psychological harms, imposed on nearly every poor person on the face of the earth, for a generation."
48) Professor Explains Flaw in Many Models Used for COVID-19 Lockdown Policies, Chen, 2021	"Economics professor Doug Allen wanted to know why so many early models used to create COVID-19 lockdown policies turned out to be highly incorrect. What he found was that a great majority were based on false assumptions and "tended to over-estimate the benefits and under-estimate the costs." He found it troubling that policies such as total lockdowns were based on those models. "They were built on a set of assumptions. Those assumptions turned out to be really important, and the models are very sensitive to them, and they turn out to be false," said Allen, the Burnaby Mountain Professor of Economics at Simon Fraser University, in an interview.""Furthermore, "The limited effectiveness of lockdowns explains why, after one year, the unconditional cumulative deaths per million, and the pattern of daily deaths per million, is not negatively correlated with the stringency of lockdown across countries," writes Allen. In other words, in his assessment, heavy lockdowns do not meaningfully reduce the number of deaths in the areas where they are implemented, when compared to areas where lockdowns were not implemented or as stringent."
49) The Anti-Lockdown Movement Is Large and Growing, Tucker, 2021	"The lesson: lockdown policies failed to protect the vulnerable and otherwise did little to nothing actually to suppress or otherwise control the virus. AIER has assembled fully 35 studies revealing no connection between lockdowns and disease outcomes. In addition, the Heritage Foundation has published an outstanding roundup of the Covid experience, revealing that lockdowns were largely political theater distracting from what should have been good public health practice."
50) The Ugly Truth About The Covid-19 Lockdowns, Hudson, 2021	"By following the data and official communications from global organisations, PANDA unravels what transpired that led us into deleterious lockdowns, which continue to have enormous negative impacts across the world."

51) The Catastrophic Impact of Covid Forced Societal Lockdowns, Alexander, 2020	"It is also noteworthy that these irrational and unreasonable restrictive actions are not limited to any one jurisdiction such as the US, but shockingly have occurred across the globe. It is stupefying as to why governments, whose primary roles are to protect their citizens, are taking these punitive actions despite the compelling evidence that these policies are misdirected and very harmful; causing palpable harm to human welfare on so many levels. It's tantamount to insanity what governments have done to their populations and largely based on no scientific basis. None! In this, we have lost our civil liberties and essential rights, all based on spurious 'science' or worse, opinion, and this erosion of fundamental freedoms and democracy is being championed by government leaders who are disregarding the Constitutional (USA) and Charter (Canada) limits to their right to make and enact policy. These unconstitutional and unprecedented restrictions have taken a staggering toll on our health and well-being and also target the very precepts of democracy; particularly given the fact that this viral pandemic is no different in overall impact on society than any previous pandemics. There is simply no defensible rationale to treat this pandemic any differently."
52) Cardiovascular and immunological implications of social distancing in the context of COVID-19, D'Acquisto, 2020	"It is clear that social distancing measures such as lockdown during the COVID-19 pandemic will have subsequent effects on the body including the immune and cardiovascular systems, the extent of which will be dependent on the duration of such measures. The take-home message of these investigations is that social interaction is an integral part of a wide range of conditions that influence cardiovascular and immunological homeostasis."

53) A Statistical Analysis of COVID-19 and Government Protection Measures in the U.S., Dayaratna, 2021	"Our analysis demonstrates that the time from a state's first case to voluntary changes in residence mobility, which occurred before the imposition of shelter-in-place orders in 43 states, indeed quelled the time to reach the maximum growth in per capita cases. On the other hand, our analysis also indicates that these behavioral changes were not significantly effective in quelling mortality… our simulations find a negative effect of the time from a state's first case to the imposition of shelter-in-place orders on the time to reach the specified per capita mortality thresholds. Our analysis also finds a slightly smaller negative effect on the time from a state's first case to the imposition of prohibitions on gatherings above 500 people…. shelter-in-place orders can also have negative unforeseen health-related consequences, including the capacity to cause patients to avoid visits to doctors' offices and emergency rooms. In addition, these policies can result in people, including those with chronic illnesses, skipping routine medical appointments, not seeking routine procedures to diagnose advanced cancer, not pursuing cancer screening colonoscopies, postponing non-emergency cardiac catheterizations, being unable to seek routine care if they experience chronic pain, and suffering mental health effects, among others…drug overdose deaths, alcohol consumption, and suicidal ideation have also been noted to have increased in 2020 compared to prior years."
54) Lockdowns in Taiwan: Myths Versus Reality, Gartz, 2021	"Articles citing a "tightening" of rules only briefly acknowledge that Taiwan never locked down. Instead, they blame the increase in cases on a loosening of travel restrictions and on people's becoming "more relaxed or careless as time goes by." A closer look reveals that this harsh turn in restrictions consists of capping gatherings at 500 for outdoors and 100 for indoors to 10 and 5 respectively — more in line with gathering limits imposed by Western nations.The reality is that the hyperbolic 124 action items misrepresent the Taiwanese approach. Relative to other countries, Taiwan serves as a beacon of freedom: children still attended school, professionals continued to go to work, and businesspeople were able to keep their businesses open."
55) Lockdowns Need to Be Intellectually Discredited Once and For All, Yang, 2021	"Lockdowns do not provide any meaningful benefit and they cause unnecessary collateral damage. Voluntary actions and light-handed accommodations to protect the vulnerable according to comprehensive analysis, not cherry-picked studies with overly short timelines, provide similar, if not better, virus mitigation compared to lockdown policies. Furthermore, contrary to what many keep trying to say, it is lockdowns that are the causal factor behind the unprecedented economic and social damage that has been dealt to society."

56) Canada's COVID-19 Strategy is an Assault on the Working Class, Kulldorff, 2020	"The Canadian COVID-19 lockdown strategy is the worst assault on the working class in many decades. Low-risk college students and young professionals are protected; such as lawyers, government employees, journalists, and scientists who can work from home; while older high-risk working-class people must work, risking their lives generating the population immunity that will eventually help protect everyone. This is backwards, leading to many unnecessary deaths from both COVID-19 and other diseases."
57) Our COVID-19 Plan would Minimize Mortality and Lockdown-induced Collateral Damage, Kulldorff, 2020	"While mortality is inevitable during a pandemic, the COVID-19 lockdown strategy has led to more than 220,000 deaths, with the urban working class carrying the heaviest burden. Many older workers have been forced to accept high mortality risk or increased poverty, or both. While the current lockdowns are less strict than in March, the lockdown and contact tracing strategy is the worst assault on the working class since segregation and the Vietnam War.Lockdown policies have closed schools, businesses and churches, while not enforcing strict protocols to protect high-risk nursing home residents. University closures and the economic displacement caused by lockdowns have led millions of young adults to live with older parents, increasing regular close interactions across generations."
58) The costs are too high; the scientist who wants lockdown lifted faster; Gupta, 2021	"It's becoming clear that a lot of people have been exposed to the virus and that the death rate in people under 65 is not something you would lock down the economy for," she says. "We can't just think about those who are vulnerable to the disease. We have to think about those who are vulnerable to lockdown too. The costs of lockdown are too high at this point."
59) Review of the Impact of COVID-19 First Wave Restrictions on Cancer Care, Collateral Global, Heneghan; 2021	"Restrictive measures in the first wave of the COVID19 pandemic in 2019-20 led to wide-scale, global disruption of cancer care. Future restrictions should consider disruptions to the cancer care pathways and plan to prevent unnecessary harms."
60) German Study Finds Lockdown 'Had No Effect' on Stopping Spread of Coronavirus, Watson, 2021	"Stanford researchers found "no clear, significant beneficial effect of [more restrictive measures] on case growth in any country."
61) Lockdown will claim the equivalent of 560,000 lives because of the health impact of the 'deep and prolonged recession it will cause', expert warns, Adams/Thomas/Daily Mail, 2020	"Lockdowns will end up claiming the equivalent of more than 500,000 lives because of the health impact of the 'deep and prolonged recession it will cause."

62) Anxiety From Reactions to Covid-19 Will Destroy At Least Seven Times More Years of Life Than Can Be Saved by Lockdowns, Glen, 2021	"Likewise, a 2020 paper about quarantines published in The Lancet states: "Separation from loved ones, the loss of freedom, uncertainty over disease status, and boredom can, on occasion, create dramatic effects. Suicide has been reported, substantial anger generated, and lawsuits brought following the imposition of quarantine in previous outbreaks. The potential benefits of mandatory mass quarantine need to be weighed carefully against the possible psychological costs."Yet, when dealing with Covid-19 and other issues, politicians sometimes ignore this essential principle of sound decision-making. For a prime example, NJ Governor Phil Murphy recently insisted that he must maintain a lockdown or "there will be blood on our hands." What that statement fails to recognize is that lockdowns also kill people via the mechanisms detailed above… In other words, the anxiety from reactions to Covid-19—such as business shutdowns, stay-at-home orders, media exaggerations, and legitimate concerns about the virus—will extinguish at least seven times more years of life than can possibly be saved by the lockdowns.Again, all of these figures minimize deaths from anxiety and maximize lives saved by lockdowns. Under the more moderate scenarios documented above, anxiety will destroy more than 90 times the life saved by lockdowns."
63) The psychological impact of quarantine and how to reduce it: rapid review of the evidence, Brooks, 2020	"Reported negative psychological effects including post-traumatic stress symptoms, confusion, and anger. Stressors included longer quarantine duration, infection fears, frustration, boredom, inadequate supplies, inadequate information, financial loss, and stigma. Some researchers have suggested long-lasting effects. In situations where quarantine is deemed necessary, officials should quarantine individuals for no longer than required, provide clear rationale for quarantine and information about protocols, and ensure sufficient supplies are provided. Appeals to altruism by reminding the public about the benefits of quarantine to wider society can be favourable."
64) Lockdown 'had no effect' on coronavirus pandemic in Germany, Huggler, 2021	"A new study by German scientists claims to have found evidence that lockdowns may have had little effect on controlling the coronavirus pandemic. Statisticians at Munich University found "no direct connection" between the German lockdown and falling infection rates in the country."
65) Swedish researchers: Anti-corona restrictions have killed as many people as the virus itself, Peterson, 2021	"The restrictions against the coronavirus have killed as many people as the virus itself. The restrictions have first and foremost hit the poorer parts of the world and struck young people, the researchers believe, pointing to children who died of malnutrition and various diseases. They also pointed to adults who died of diseases that could have been treated. "These deaths we see in poor countries are related to women who die in childbirth, newborns who die early, children who die of pneumonia, diarrhea, and malaria because they are malnourished or not vaccinated," Peterson said."

66) Lockdowns Leave London Broken, Burden, 2021	“In normal times, London runs on a sprawling network of trains and buses that bring in millions of commuters to work and spend. Asking those people to work from home ripped the heart out of the economy, leaving the U.K. capital more like a ghost town than a thriving metropolis.The city is now emerging from a year of lockdowns with deeper scars than much of the rest of the U.K. Many restaurants, theaters and shops remain shuttered, and the migrant workers that staffed them fled to their birth countries in the tens of thousands. Even when most of the rules expire in June, new border restrictions since the U.K. left the European Union will make it harder for many to return. As a result, the city’s business model focused on population density is in upheaval, and many of London’s strengths have turned to weaknesses.”
67) Lockdowns Are a Step Too Far in Combating Covid-19, Nocera, 2020	“The truth is that using lockdowns to halt the spread of the coronavirus was never a good idea. If they have any utility at all, it is short term: to help ensure that hospitals aren’t overwhelmed in the early stages of the pandemic. But the long-term shutdowns of schools and businesses, and the insistence that people stay indoors — which almost every state imposed at one point or another — were examples of terribly misguided public policy. It is likely that when the history of this pandemic is told, lockdowns will be viewed as one of the worst mistakes the world made.”
68) Stop the Lies: Lockdowns Did Not and Do Not Protect the Vulnerable, Alexander, 2021	“Lockdowns didn’t protect the vulnerable, but rather harmed them and shifted the morbidity and mortality burden to the underprivileged.”
69) Why Shutdowns and Masks Suit the Elite, Swaim, 2021	“The dispute over masks—like those over school closures, business shutdowns, social-distancing guidelines and all the rest—should always properly have been a discussion of acceptable versus unacceptable risk. But the preponderance of America’s cultural and political leaders showed no ability to think about risk in a helpful way.”
70) The Impact of the COVID-19 Pandemic and Policy Responses on Excess Mortality, Agrawal, 2021	“Find that following the implementation of SIP policies, excess mortality increases. The increase in excess mortality is statistically significant in the immediate weeks following SIP implementation for the international comparison only and occurs despite the fact that there was a decline in the number of excess deaths prior to the implementation of the policy… failed to find that countries or U.S. states that implemented SIP policies earlier, and in which SIP policies had longer to operate, had lower excess deaths than countries/U.S. states that were slower to implement SIP policies. We also failed to observe differences in excess death trends before and after the implementation of SIP policies based on pre-SIP COVID-19 death rates.”

71) COVID-19 Lockdowns Over 10 Times More Deadly Than Pandemic Itself, Revolver, 2020	“We have drawn upon existing economic studies on the health effects of unemployment to calculate an estimate of how many years of life will have been lost due to the lockdowns in the United States, and have weighed this against an estimate of how many years of life will have been saved by the lockdowns. The results are nothing short of staggering, and suggest that the lockdowns will end up costing Americans over 10 times as many years of life as they will save from the virus itself.”
72) The Impact of Interruptions in Childhood Vaccination, Collateral Global, 2021	“COVID-19 pandemic measures caused significant disruption to childhood vaccination services and uptake. In future pandemics, and for the remainder of the current one, policymakers must ensure access to vaccination services and provide catch-up programs to maintain high levels of immunisation, especially in those most vulnerable to childhood diseases in order to avoid further inequalities.”
73) Shelter-in-place orders didn’t save lives during the pandemic, research paper concludes, Howell, 2021 COVID-19 lockdowns caused more deaths instead of reducing them, study finds	“Researchers from the RAND Corporation and the University of Southern California studied excess mortality from all causes, the virus or otherwise, in 43 countries and the 50 U.S. states that imposed shelter-in-place, or “SIP,” policies. In short, the orders didn’t work. “We fail to find that SIP policies saved lives. To the contrary, we find a positive association between SIP policies and excess deaths. We find that following the implementation of SIP policies, excess mortality increases,” the researchers said in a working paper for the National Bureau of Economic Research (NBER).”
74) Experts Said Ending Lockdowns Would Be Worse for the Economy than the Lockdowns Themselves. They Were Wrong, MisesInstitute, 2021	“There is no indication whatsoever that states with longer periods of lockdown and forced social distancing fared better economically than states that abandoned covid restrictions much earlier. Rather, many states that ended lockdowns early—or didn’t have them at all—now show less unemployment and more economic growth than states that imposed lockdowns and social distancing rules much longer. The complete lack of any correlation between economic success and covid lockdowns illustrates yet again that the confident predictions of the experts—who insisted that states without long lockdowns would endure bloodbaths and economic destruction—were very wrong.”

75) The Harms of Lockdowns, The Dangers of Censorship, And A Path Forward, AIER, 2020	“When you read about failures of intelligence, probably the most spectacular being the weapons of mass destruction fiasco, the lesson that they were supposed to learn from that, and maybe have learned, is that you need to encourage cognitive dissonance. You need to encourage critical thinking. You need to have people who are looking at things differently than your mainstream view, because it will help to prevent you from making catastrophic errors. It will help to keep you honest.And we’ve done exactly the opposite instead of encouraging critical thinking, different ideas, we’ve stifled it. That’s what makes the actions of the Ontario College of Physicians and Surgeons towards you so shocking because it’s absolute the opposite of what we need to do. And it’s been that absence of critical thinking of incorporating critical thinking in our decision-making that has led to one mistake after another in handling COVID-19.”
76) UNDERSTANDING INTER-REGIONAL DIFFERENCES IN COVID-19 MORTALITY RATES, PANDA, 2021	“We cannot argue that the phased adoption of these measures has any impact on risk mitigation. This is an important consideration for policy makers who must carefully balance the benefits of a phased lockdown strategy with the economic harm caused by such an intervention.”
77) Potential lessons from the Taiwan and New Zealand health responses to the COVID-19 pandemic, Summers, 2020	“Extensive public health infrastructure established in Taiwan pre-COVID-19 enabled a fast coordinated response, particularly in the domains of early screening, effective methods for isolation/quarantine, digital technologies for identifying potential cases and mass mask use. This timely and vigorous response allowed Taiwan to avoid the national lockdown used by New Zealand. Many of Taiwan’s pandemic control components could potentially be adopted by other jurisdictions.”
78) 5 Times More Children Committed Suicide Than Died of COVID-19 During Lockdown: UK Study, Phillips, 2021	“Five times more children and young people committed suicide than died of COVID-19 during the first year of the pandemic in the United Kingdom, according to a study, which also concluded that lockdowns are more detrimental to children’s health than the virus itself.”
79) Study Indicates Lockdowns Have Increased Deaths of Despair, Yang, 2021	“Deaths of despair due in large part to social isolation. Regardless of whether they think lockdowns work, policymakers must be cognizant of the fact shutting down society also leads to excess deaths. Whether it’s from the government policies themselves or the willful compliance of society enforcing the soft despotism of popular hysteria, social isolation is taking its toll on the lives of many.”
80) DEATHS OF DESPAIR AND THE INCIDENCE OF EXCESS MORTALITY IN 2020, Mulligan, 2020	“Presumably social isolation is part of the mechanism that turns a pandemic into a wave of deaths of despair. However, the results in this paper do not say how much, if any, comes from government stay-at-home orders versus various actions individual households and private businesses have taken to encourage social distancing.”

81) Effects of the lockdown on the mental health of the general population during the COVID-19 pandemic in Italy: Results from the COMET collaborative network, Fiorillo, 2020	"Although physical isolation and lockdown represent essential public health measures for containing the spread of the COVID-19 pandemic, they are a serious threat for mental health and well-being of the general population. As an integral part of COVID-19 response, mental health needs should be addressed."
Mental Health and the Covid-19 Pandemic, Pfefferbaum, 2020	"The Covid-19 pandemic has alarming implications for individual and collective health and emotional and social functioning. In addition to providing medical care, already stretched health care providers have an important role in monitoring psychosocial needs and delivering psychosocial support to their patients, health care providers, and the public — activities that should be integrated into general pandemic health care."
82) Why Government Lockdowns Mostly Harm the Poor, Peterson, 2021	"For developed countries, lockdowns undoubtedly imposed significant economic and health costs. Many workers in the service sector, like the food industry, for example, were left unemployed and had to rely on government stimulus checks to get them through the bumpiest stages of the pandemic. Some businesses had to shutter their doors entirely, leaving many employers without jobs as well. This is to say nothing of the severe mental health consequences of government lockdown orders…These irresponsible government actions are especially acute and more harmful in developing countries and among the poor because most workers can't afford to sacrifice weeks or perhaps months of income, only to be confined to what is effectively house arrest."
83) Cost of Lockdowns: A Preliminary Report, AIER, 2020	"In the debate over coronavirus policy, there has been far too little focus on the costs of lockdowns. It's very common for the proponents of these interventions to write articles and large studies without even mentioning the downsides."
84) In Africa, social distancing is a privilege few can afford, Noko, 2020	"Social distancing could probably work in China and in Europe – but in many African countries, it is a privilege only a minority can afford."
85) Teargas, beatings and bleach: the most extreme Covid-19 lockdown controls around the world, Ratcliff, 2020	"Violence and humiliation used to police coronavirus curfews around globe, often affecting the poorest and more vulnerable."
86) "Shoot them dead": Philippine President Rodrigo Duterte orders police and military to kill citizens who defy coronavirus lockdown, Capatides, 2020	"Later that night, Philippine President Rodrigo Duterte took to the airwaves with a chilling warning for his citizens: Defy the lockdown orders again and the police will shoot you dead."

87) Colombia's Capital Locks Down as Cases Surge, Vyas, 2021 Colombia Protests Turn Deadly Amid Covid-19 Hardships	"Bogotá, which has logged a quarter of the nation's cases, had already applied restrictions on mobility and alcohol sales in order to contain gatherings and the spread of the virus before expanding the measures.""The nationwide unrest was triggered by a proposed tax-collection overhaul and stringent pandemic lockdowns that have been blamed for causing mass unemployment and throwing some four million people into poverty."
88) Argentina receives AstraZeneca jabs amid anti-lockdown protests, AL JAZEERA, 2021	"New COVID-19 restrictions have been imposed in and around Buenos Aires in effort to stem recent rise in infections…Argentines took to the streets on Saturday, however, to protest against new coronavirus-related restrictions in and around the capital, Buenos Aires, that came into effect on Friday… Horacio Rodriguez Larreta, head of the city government, said last week that Buenos Aires "totally disagree[s] with the decision of the national government to close schools."
89) Lives vs. Livelihoods Revisited: Should Poorer Countries with Younger Populations Have Equally Strict Lockdowns? Von Carnap, 2020	"Economists in the rich world have largely supported stringent containment measures, rejecting any trade-off between lives and livelihoods…strict lockdowns in countries where a significant share of the population is poor are likely to have more severe consequences on welfare than in richer countries. From a macro perspective, any negative economic effect of a lockdown is reducing a budget with already fewer resources in a poor country."
90) Responding to the COVID-19 Pandemic in Developing Countries: Lessons from Selected Countries of the Global South, Chowdhury, 2020	"If testing, contact tracing and other early containment measures had been adequately done in a timely manner to stem viral transmission, nationwide lockdowns would not have been necessary, and only limited areas would have had to be locked down for quarantine purposes. The effectiveness of containment measures, including lockdowns, are typically judged primarily by their ability to quickly reduce new infections, 'flatten the curve' and avoid subsequent waves of infections. However, lockdowns can have many effects, depending on context, and typically incur huge economic costs, unevenly distributed in economies and societies."
91) Battling COVID-19 with dysfunctional federalism: Lessons from India, Choutagunta, 2021	"Find that India's centralized lockdown was at best a partial success in a handful of states, while imposing enormous economic costs even in areas where few were affected by the pandemic."
92) The 2006 Origins of the Lockdown Idea, Tucker, 2020	"Now begins the grand effort, on display in thousands of articles and news broadcasts daily, somehow to normalize the lockdown and all its destruction of the last two months. We didn't lock down almost the entire country in 1968/69, 1957, or 1949-1952, or even during 1918. But in a terrifying few days in March 2020, it happened to all of us, causing an avalanche of social, cultural, and economic destruction that will ring through the ages."

93) Young People Are Particularly Vulnerable To Lockdowns, Yang, 2021	"The damage to society was certainly extensive, with a 3.5 percent annualized economic retraction record in 2020 and a 32.9 percent decline in Q2 of 2020, making this one of the sharpest economic declines in modern history. However, the level of suffering and trauma caused by these policies cannot be appropriately expressed by economic data alone. Lockdown policies may have caused a substantial amount of financial damage but the social damage is just as concerning, if not more so. Across the board, there have been increased reports of mental health issues, such as depression and anxiety, that are linked to social isolation, substantial life disruptions, and existential dread over the state of the world. Unlike lost dollars, mental health problems leave real and lasting damage which could lead to complications later in life, if not self-harm or suicide. For young people, a drastic increase in suicides has claimed more lives than Covid-19. That is because they are far less vulnerable to Covid than older segments of the population but far more negatively impacted by lockdowns."
94) More "Covid Suicides" than Covid Deaths in Kids, Gartz, 2021	"Before Covid, an American youth died by suicide every six hours. Suicide is a major public health threat and a leading cause of death for those aged under 25 — one far bigger than Covid. And it is something that we have only made worse as we, led by politicians and 'the science,' deprived our youngest members of society — who constitute one-third of the US population — of educational, emotional and social development without their permission or consent for over a year… the biggest increase in youth deaths occurred in the 15-24 age bracket — the age group most susceptible to committing suicide, and which constitutes 91% of youth suicides… such "deaths of despair" tend to be higher among youths, particularly for those about to graduate or enter the workforce. With economic shrinkage due to lockdowns and forced closures of universities, youths face both less economic opportunity and limited social support — which plays an important role in reporting and preventing self-harm — through social networks."
95) Comparison of COVID-19 outcomes among shielded and non-shielded populations, Jani, 2021	"Linked family practitioner, prescribing, laboratory, hospital and death records and compared COVID-19 outcomes among shielded and non-shielded individuals in the West of Scotland. Of the 1.3 million population, 27,747 (2.03%) were advised to shield, and 353,085 (26.85%) were classified a priori as moderate risk…in spite of the shielding strategy, high risk individuals were at increased risk of death."

96) Sweden: Despite Variants, No Lockdowns, No Daily Covid Deaths, Fumento, 2021	""Locking down is saving time," he said last year. "It's not solving anything." In essence the country "front-loaded" its deaths and decreased those deaths later on…Despite Sweden inevitably feeling undertow from economies that did lock down, "Covid-19 has had a rather limited impact on its economy compared with most other European countries," according to the Nordetrade.com consulting firm. "Softer preventative restrictions against Covid-19 earlier in the year and a strong recovery in the third quarter contained the GDP contraction," it said.Thus, the country the media loved to hate is reaping the best of all worlds: Few current cases and deaths, stronger economic growth than the lockdown countries, and its people never experienced the yoke of tyranny."
97) Lockdown lessons, Ross, 2021	"Never take radical action without overwhelming evidence that it will work. The authorities took all manner of drastic actions and weren't the least bit interested in offering evidence and they still aren't. Unelected bureaucrats, who know nothing about us, dictated how we live our lives down to the tiniest details. The authorities coerced hundreds of millions of people to wear masks. They assumed that would reduce transmission. There is now evidence that masks are worse than useless.Be extremely reluctant to commit sweeping violations of the Constitution. The Constitution is our country's greatest asset and our north star. Ignoring it or trampling on it is never a good idea. The Constitution is what makes us who we are. We ought to treat it like the treasure it is.Always consider both costs and benefits and make best-effort projections of both. The costs of virtually every aspect of the lockdown were more than the benefits, usually far more…it has increased the amount of depression and number of suicides, especially among those age 18 and younger. The postponement and cancellation of medical appointments have resulted in thousands of premature deaths."
98) Prof. Sunetra Gupta — New Lockdown is a Terrible Mistake, Gupta, 2020	"I would beg to disagree. I think there is an alternative, and that alternative involves reducing the deaths that this pandemic might cause by diverting our energies to protecting the vulnerables. Now, why would I say that? The main reason to say that is because the costs of alternative strategies such as lockdown are so profound that we are left with a contemplation of how to go ahead, go forwards, in this current sort of situation without inflicting harm, not just to those who are vulnerable to COVID, but to the general population in a way that meets with those standards that we set ourselves from the moment we were, maybe not born, but from the moment that we became cognizant of those responsibilities towards society."
99) The harms of lockdown will vastly outweigh the benefits, Hinton, 2021	"Nearly 1.2 m people waiting at least six months for vital services."

100) Lockdowns don't work, Stone/AEI, 2020	"Lockdowns don't work. That simple sentence is enough to ignite a firestorm of controversy these days, whether you say it in public (to someone at least six feet away, of course) or online. As soon as the words leave your lips, they begin to be interpreted in extraordinary ways. Why do you want to kill old people? Why do you think the economy is more important than saving lives? Why do you hate science? Are you a shill for Trump? Why are you spreading misinformation about the severity of COVID? But here's the thing: there's no evidence of lockdowns working. If strict lockdowns actually saved lives, I would be all for them, even if they had large economic costs. But, put simply, the scientific and medical case for strict lockdowns is paper-thin… If you're going to essentially cancel the civil liberties of the entire population for a few weeks, you should probably have evidence that the strategy will work."
101) Science Killed itself over COVID-19, Raleigh/Federalist/Atlas, 2021	"Lockdowns destroyed people, Atlas said, by "shutting down medical care, stopping people from seeking emergency medical care, increasing drug abuse, increasing death by suicide, more psychological damage, particularly among the younger generation. Hundreds and thousands of child abuse cases went unreported. Teenagers' self-harm cases have tripled… Mortality data showing that anywhere from a third or half of the deaths during the pandemic were not due to COVID-19," Atlas said. "They were extra deaths due to the lockdowns…we should offer targeted protections for high-risk people but no lockdowns of low-risk people."
102) Assembling Covid Jigsaw Pieces Into a Complete Pandemic Picture, Brookes, 2021	"Overall there is a minimal positive impact from quarantine policy, isolation requirements, Test and Trace regimes, social distancing, masking or other non-pharmaceutical interventions. Initially, these were the only tools in the tool-box of interventionist politicians and scientists. At best they slightly delayed the inevitable, but they also caused considerable collateral harms."

103) Covid Lockdowns Signal the Rise of Public Policy by Ransom, O'Neill/MisesInstitute, 2021	"Public policy by ransom occurs when a government imposes a behavioral requirement on individuals and enforces this by punishing the general public in aggregate until a stipulated level of compliance is attained. The method relies on members of the public and public commentators—like Marcotte—who will attribute blame for these negative consequences to recalcitrant citizens who fail to adopt the preferred behaviors of the governing class. In the weltanschauung that underpins this type of governance, government reactions to public behaviors are "metaphysically given" and are treated as a mere epiphenomenon of the actions of individual members of the public who dare to behave in ways disliked by public authorities… what has emerged as an ominous mode of thinking in this atmosphere is the reflexive attribution of blame to recalcitrant members of the public for any subsequent negative consequences imposed on the public by government policies. If the government chooses to impose a negative consequence on the public—even conditionally on the behavior of the public—that consequence is a chosen policy of the government and must be viewed as a policy choice."
104) Sweden Saw Lower Mortality Rate Than Most of Europe in 2020, Despite No Lockdown, Miltimore, 2021	"I think people will probably think very carefully about these total shutdowns, how good they really were…t hey may have had an effect in the short term, but when you look at it throughout the pandemic, you become more and more doubtful…data published by Reuters that show Sweden, which shunned the strict lockdowns embraced by most nations around the world, experienced a smaller increase in its mortality rate than most European countries in 2020."
105) Weighing the Costs of COVID Versus the Costs of Lockdowns, Leef/National Review, 2021	"Yet there was no such careful calculation for the lockdowns imposed in haste to combat Covid-19. Lockdowns were simply assumed not only to be effective at significantly slowing the spread of SARS-CoV-2, but also to impose only costs that are acceptable. Regrettably, given the novelty of the lockdowns, and the enormous magnitude of their likely downsides, this bizarrely sanguine attitude toward lockdowns was – and remains – wholly unjustified. And the unjustness of this reaction is further highlighted by the fact that, in a free society, the burden of proof is on those who would restrict freedom and not on those who resist such restrictions… policy-makers should be just as interested in the costs of the problem as in the costs of any proposed solution to it."
106) Increase in preterm stillbirths and reduction in iatrogenic preterm births for fetal compromise: a multi-centre cohort study of COVID-19 lockdown effects in Melbourne, Australia, Hui, 2021	"Lockdown restrictions in a high-income setting, in the absence of high rates of COVID-19 disease, were associated with a significant increase in preterm stillbirths, and a significant reduction in iatrogenic PTB for suspected fetal compromise."

107) Impact of the COVID19 pandemic on cardiovascular mortality and catherization activity during the lockdown in central Germany: an observational study, Nef, 2021	"During the COVID-19-related lockdown a significant increase in cardiovascular mortality was observed in central Germany, whereas catherization activities were reduced."
108) Editor's Note – Cancer Review Issue, Collateral Global, 2021	"Before the lockdowns, we had made so much progress in the war on cancer. Between 1999 and 2019, cancer mortality dropped by an astonishing 27% in the United States, down to 600,000 deaths in 2019. Worldwide, the age-standardized death rate from cancer has decreased by 15% since 1990. Cancer, like COVID-19, is by proportion an old person's disease, with 27% of cases afflicting people 70 and over and over 70% of cases afflicting people 50 and over. Despite progress against the disease, 18.1 million new cases were diagnosed worldwide in 2018, and 9.6 million people died from cancer… N\nearly eight out of ten cancer patients reported delays in care, with almost six out ten skipping doctor visits, one in four skipping imaging, and one in six missing surgery…the toll from cancer, exacerbated by lockdown and panic, will continue into the indefinite future."
109) Impact of COVID-19 and partial lockdown on access to care, self-management and psychological well-being among people with diabetes: A cross-sectional study, Yeoh, 2021	"COVID-19 and lockdown had mixed impacts on self-care and management behaviours. Greater clinical care and attention should be provided to people with diabetes with multiple comorbidities and previous mental health disorders during the pandemic and lockdown…the pandemic and quarantine measures may have led to many losses including a loss of loved ones, employment, financial security, direct social contacts, educational opportunities, recreation and social support. A review of the psychological impact of quarantine demonstrated a high prevalence of psychological symptoms and emotional disturbance."
110) Mental Health During the COVID-19 Pandemic in the United States: Online Survey, Jewell, 2020	"Findings suggest that many US residents are experiencing high stress, depressive, and anxiety symptomatology, especially those who are underinsured, uninsured, or unemployed."
111) Mental health in the UK during the COVID-19 pandemic: cross-sectional analyses from a community cohort study, Jia, 2020	"Increased psychological morbidity was evident in this UK sample and found to be more common in younger people, women and in individuals who identified as being in recognised COVID-19 risk groups. Public health and mental health interventions able to ameliorate perceptions of risk of COVID-19, worry about COVID-19 loneliness and boost positive mood may be effective."
112) The psychological impact of quarantine on coronavirus disease 2019 (COVID-19), Luo, 2020	"Based on these studies, a great amount of psychologic symptoms or problems developed during the quarantine period, including anxiety (228/649, 35.1%), depression (110/649, 16.9%), loneliness (37/649, 5.7%) and despair (6/649, 0.9%). One study (Dong et al., 2020) reported that people quarantined had suicidal tendencies or ideas than those not quarantined."

113) COVID-19 pandemic leads to major backsliding on childhood vaccinations, new WHO, UNICEF data shows, WHO, 2021	"23 million children missed out on basic childhood vaccines through routine health services in 2020, the highest number since 2009 and 3.7 million more than in 2019"
114) Virus-linked hunger tied to 10,000 child deaths each month, Hinnant, 2020	"All around the world, the coronavirus and its restrictions are pushing already hungry communities over the edge, cutting off meager farms from markets and isolating villages from food and medical aid. Virus-linked hunger is leading to the deaths of 10,000 more children a month over the first year of the pandemic, according to an urgent call to action from the United Nations shared with The Associated Press ahead of its publication in the Lancet medical journal…The parents of the children are without work," said Annelise Mirabal, who works with a foundation that helps malnourished children in Maracaibo, the city in Venezuela thus far hardest hit by the pandemic. "How are they going to feed their kids?…in May, Nieto recalled, after two months of quarantine in Venezuela, 18-month-old twins arrived at his hospital with bodies bloated from malnutrition."
115) CG REPORT 3: The Impact of Pandemic Restrictions on Childhood Mental Health, Collateral Global, 2021	"The evidence shows the overall impact of COVID-19 restrictions on the mental health and well-being of children and adolescents is likely to be severe… Eight out of ten children and adolescents report worsening of behaviour or any psychological symptoms or an increase in negative feelings due to the COVID-19 pandemic. School closures contributed to increased anxiety, loneliness and stress; negative feelings due to COVID-19 increased with the duration of school closures. Deteriorating mental health was found to be worse in females and older adolescents."
116) Unintended Consequences of Lockdowns: COVID-19 and the Shadow Pandemic, Ravindran, 2021	"Using variation in the intensity of government-mandated lock-downs in India, we show that domestic violence complaints increase 0.47 SD in districts with the strictest lockdown rules. We find similarly large increases in cyber-crime complaints."
117) Projected increases in suicide in Canada as a consequence of COVID-19, McIntyre, 2020	"A percentage point increase in unemployment was associated with a 1.0% increase in suicide between 2000 and 2018. In the first scenario, the rise in unemployment rates resulted in a projected total of 418 excess suicides in 2020-2021 (suicide rate per 100,000: 11.6 in 2020). In the second scenario, the projected suicide rates per 100,000 increased to 14.0 in 2020 and 13.6 in 2021, resulting in 2114 excess suicides in 2020-2021. These results indicate that suicide prevention in the context of COVID-19-related unemployment is a critical priority."

118) COVID-19, unemployment, and suicide, Kawohl, 2020	"In the high scenario, the worldwide unemployment rate would increase from 4·936% to 5·644%, which would be associated with an increase in suicides of about 9570 per year. In the low scenario, the unemployment would increase to 5·088%, associated with an increase of about 2135 suicides… expect an extra burden for our mental health system, and the medical community should prepare for this challenge now. Mental health providers should also raise awareness in politics and society that rising unemployment is associated with an increased number of suicides. The downsizing of the economy and the focus of the medical system on the COVID-19 pandemic can lead to unintended long-term problems for a vulnerable group on the fringes of society."
119) The impact of the COVID-19 pandemic on cancer deaths due to delays in diagnosis in England, UK: a national, population-based, modelling study, Maringe, 2020	"Substantial increases in the number of avoidable cancer deaths in England are to be expected as a result of diagnostic delays due to the COVID-19 pandemic in the UK."
120) Economic impact of avoidable cancer deaths caused by diagnostic delay during the COVID-19 pandemic: A national population-based modelling study in England, UK, Gheorghe, 2021	"Premature cancer deaths resulting from diagnostic delays during the first wave of the COVID-19 pandemic in the UK will result in significant economic losses. On a per-capita basis, this impact is, in fact, greater than that of deaths directly attributable to COVID-19. These results emphasise the importance of robust evaluation of the trade-offs of the wider health, welfare and economic effects of NPI to support both resource allocation and the prioritisation of time-critical health services directly impacted in a pandemic, such as cancer care."
121) Cancer during the COVID-19 pandemic: did we shout loudly enough and did anyone listen? A lasting legacy for nations, Price, 2021	"In just four cancer types (breast, colon, lung and oesophagus), studies during the first wave of the COVID-19 pandemic (published July 2020 [3]) predicted 60,000 lost life years. The quality-adjusted life years and the productivity losses due to these excess cancer deaths have been estimated in this new article to be 32,700 and £104 million over 5 years, respectively. This is nearly 1.5 times higher per capita than that of deaths directly related to COVID-19 in that time. The authors confirm that this is a conservative estimate for these cancer groups as it does not take into account additional productivity losses due to delays or reduction in quality of treatment and stage migration."
122) Donation and transplantation activity in the UK during the COVID-19 lockdown, Manara, 2020	"Compared with 2019, the number of deceased donors decreased by 66% and the number of deceased donor transplants decreased by 68%, larger decreases than we estimated."
123) Rapid Systematic Review: The Impact of Social Isolation and Loneliness on the Mental Health of Children and Adolescents in the Context of COVID-19, Loades, 2020	"Children and adolescents are probably more likely to experience high rates of depression and most likely anxiety during and after enforced isolation ends. This may increase as enforced isolation continues."

124) The Costs and Benefits of Covid-19 Lockdowns in New Zealand, Lally, 2021	"Using data available up to 28 June 2021, the estimated additional deaths from a mitigation strategy are 1,750 to 4,600, implying a Cost per Quality Adjusted Life Year saved by locking down in March 2020 of at least 13 times the generally employed threshold figure of $62,000 for health interventions in New Zealand; the lockdowns do not then seem to have been justified by reference to the standard benchmark. Using only data available to the New Zealand government in March 2020, the ratio is similar and therefore the same conclusion holds that the nation-wide lockdown strategy was not warranted."
125) Trends in suicidal ideation over the first three months of COVID-19 lockdowns, Killgore, 2020	"The percentage of respondents endorsing suicidal ideation was greater with each passing month for those under lockdown or shelter-in-place restrictions due to the novel coronavirus, but remained relatively stable and unchanged for those who reported no such restrictions."
126) Cardiovascular Mortality during the COVID-19 Pandemics in a Large Brazilian City: a Comprehensive Analysis, Brant, 2021	"The greater occurrence of CVD deaths at home, in parallel with lower hospitalization rates, suggests that CVD care was disrupted during the COVID-19 pandemics, which more adversely affected older and more socially vulnerable individuals, exacerbating health inequities in BH."
127) Excess Deaths in People with Cardiovascular Diseases during the COVID-19 Pandemic, Banerjee, 2021	"Mortality data suggest indirect effects on CVD will be delayed rather than contemporaneous (peak RR 1.14). CVD service activity decreased by 60–100% compared with pre-pandemic levels in eight hospitals across China, Italy, and England."
128) Cardiovascular Deaths During the COVID-19 Pandemic in the United States, Wadhera, 2021	"Hospitalizations for acute cardiovascular conditions have declined, raising concern that patients may be avoiding hospitals because of fear of contracting severe acute respiratory syndrome- coronavirus-2 (SARS-CoV-2)…there was an increase in deaths caused by ischemic heart disease and hypertensive diseases in some regions of the United States during the initial phase of the COVID-19 pandemic."
129) Lockdowns of Young People Lead to More Deaths from Covid-19, Berdine, 2020	"On April 1, 2020 Dr Anthony Fauci indicated that lockdowns would have to continue until there were zero new cases. This policy indicated a strategy whose goal was eradication of the virus through lockdown. The premise that the virus could be eradicated was a false one. While individual virus particles can certainly be killed, the Covid-19 virus cannot be eradicated. If the virus could be eradicated, then Australia would have already succeeded with its brutal lockdown. All of the scientific data, as opposed to the wishful thinking coming out of Garbage In Garbage Out models, indicates that the virus is here forever – much like influenza. Given the fact that the virus will eventually spread to the entire young and economically active population, lockdowns of the young cannot possibly achieve reduced mortality compared to voluntary action."

130) A second lockdown would break South Africans, Griffiths, 2020	"It is likely that soon there will be increased calls for a second hard lockdown as it gets worse, either countrywide or in particular provinces. Should such a decision be implemented it will probably take many South Africans over their breaking point as some may well lose what they so desperately attempted to save during the initial lockdown."
131) CDC, Longitudinal Trends in Body Mass Index Before and During the COVID-19 Pandemic Among Persons Aged 2–19 Years — United States, 2018–2020, Lange, 2021	"During the COVID-19 pandemic, children and adolescents spent more time than usual away from structured school settings, and families who were already disproportionally affected by obesity risk factors might have had additional disruptions in income, food, and other social determinants of health.† As a result, children and adolescents might have experienced circumstances that accelerated weight gain, including increased stress, irregular mealtimes, less access to nutritious foods, increased screen time, and fewer opportunities for physical activity (e.g., no recreational sports) (2,3)."
132) The Truth About Lockdowns, Rational Ground, 2021	"1.4 million additional tuberculosis deaths due to lockdown disruptions, 500,000 additional deaths related to HIV, Malaria deaths could double to 770,000 total per year, 65 percent decrease in all cancer screenings, Breast cancer screenings dropped 89 percent, Colorectal screenings dropped 85 percent, At least 1/3 of excess deaths in the U.S. are already not related to COVID-19, Increase in cardiac arrests but decrease in EMS calls for them, Significant increase in stress-related cardiomyopathy during lockdowns, 132 million additional people in sub-Saharan Africa are projected to be undernourished due to lockdown disruptions, Study estimates up to 2.3 million additional child deaths in the next year from lockdowns, Millions of girls have been deprived of access to food, basic healthcare, and protection and thousands exposed to abuse and exploitation."
133) The Backward Art of Slowing the Spread? Congregation Efficiencies during COVID-19, Mulligan, 2021	"Micro evidence contradicts the public-health ideal in which households would be places of solitary confinement and zero transmission. Instead, the evidence suggests that "households show the highest transmission rates" and that "households are high-risk settings for the transmission of [COVID-19]."
134) The Failed Experiment of Covid Lockdowns, Luskin, 2020	"Six months into the Covid-19 pandemic, the U.S. has now carried out two large-scale experiments in public health—first, in March and April, the lockdown of the economy to arrest the spread of the virus, and second, since mid-April, the reopening of the economy. The results are in. Counterintuitive though it may be, statistical analysis shows that locking down the economy didn't contain the disease's spread and reopening it didn't unleash a second wave of infections."

135) An Interview with Gigi Foster, Warrior Against Lockdowns, Brownstone, 2021	“Well, I mean, we thought that was necessary because we were just surrounded by people who have bought into the lockdown ideology. And they will have in their minds, a very facile sort of reason why lockdowns should work. And so, we addressed that very directly in that section as you know. We say, “Look, on the surface of it, the idea is that you prevent people from interacting with each other and therefore, transmitting the virus. That’s what people believe. That’s what they think when they think lockdown, they think, “That’s what I’m doing.” But they don’t realize how many other collateral problems are happening and also how little that particular objective is actually being serviced, because of the fact that we live in these interdependent societies now. And we also are trapping people often in large buildings, sharing air together, and not able to go outside as much and so we’re actually potentially increasing the spread of the virus, at least within communities, our communities. So, it basically is an example of trying to engage with the people we feel are misguided on this issue in a calm way, not screaming at each other, not sort of taking the radical position on either side and just saying, “I’m going to play gotcha with you” because that’s not productive.”
136) The Politicisation of Science Funding in the US, Carl, 2021	Regarding Sweden: “As an aside, the report clearly states: “The best way of comparing the mortality impact of the coronavirus (COVID-19) pandemic internationally is by looking at all-cause mortality compared with the five-year average.” So what do the new numbers show? Sweden has had negative excess mortality. In other words, the level of mortality between January 2020 and June 2021 was lower than the five-year average. If this isn’t a vindication of Anders Tegnell’s approach, I don’t know what is.”
137) Pandemic lockdown, healthcare policies and human rights: integrating opposed views on COVID-19 public health mitigation measures, Burlacu, 2020	“Starting from the rationale of the lockdown, in this paper we explored and exposed the other consequences of the COVID-19 pandemic measures such as the use or abuse of human rights and freedom restrictions, economic issues, marginalized groups and eclipse of all other diseases. Our scientific attempt is to coagulate a stable position and integrate current opposing views by advancing the idea that rather than applying the uniform lockdown policy, one could recommend instead an improved model targeting more strict and more prolonged lockdowns to vulnerable risk/age groups while enabling less stringent measures for the lower-risk groups, minimizing both economic losses and deaths. Rigorous (and also governed by freedom) debating may be able to synchronize the opposed perspectives between those advocating an extreme lockdown (e.g., most of the epidemiologists and health experts), and those criticizing all restrictive measures (e.g., economists and human rights experts). Confronting the multiple facets of the public health mitigation measures is the only way to avoid contributing to history with yet another failure, as seen in other past epidemics.”

138) Mental Health, Substance Use, and Suicidal Ideation During the COVID-19 Pandemic — United States, June 24–30, 2020, Czeisler, 2020	25.5% of persons 18 to 24 years old seriously considered suicide in the prior 30 days (Table 1).CDC: A Quarter of Young Adults Say They Contemplated Suicide This Summer During Pandemic – Foundation for Economic Education (fee.org)
139) Will the Truth on COVID Restrictions Really Prevail?, Atlas, 2021	"Separate from their limited value in containing the virus — efficacy that has often been "grossly exaggerated" in published papers — lockdown policies have been extraordinarily harmful. The harms to children of closing in-person schooling are dramatic, including poor learning, school dropouts, social isolation, and suicidal ideation, most of which are far worse for lower income groups. A recent study confirms that up to 78% of cancers were never detected due to missed screening over three months. If one extrapolates to the entire country, where about 150,000 new cancers are diagnosed per month, three-fourths to over a million new cases over nine months will have gone undetected. That health disaster adds to missed critical surgeries, delayed presentations of pediatric illnesses, heart attack and stroke patients too afraid to call emergency services, and others all well documented… Beyond hospital care, CDC reported four-fold increases in depression, three-fold increases in anxiety symptoms, and a doubling of suicidal ideation, particularly among young adults after the first few months of lockdowns, echoing the AMA reports of drug overdoses and suicides. Domestic abuse and child abuse have been skyrocketing due to the isolation and specifically to the loss of jobs, particularly in the strictest lockdowns."
140) With Low Vaccination Rates, Africa's Covid Deaths Remain Far below Europe and the US, Mises Wire, 2021	"Since the very beginning of the covid panic, the narrative has been this: implement severe lockdowns or your population will experience a bloodbath. Morgues will be overwhelmed, the death total toll will be astounding. On the other hand, we were assured those jurisdictions that do lock down would see only a fraction of the death toll… The lockdown narrative, of course, has already been thoroughly overturned. Jurisdictions that did not lock down or adopted only weak and short lockdowns ended up with covid death tolls that were either similar to—or even better than—death tolls in countries that adopted draconian lockdowns. Lockdown advocates said locked-down countries would be overwhelmingly better off. These people were clearly wrong."

141) Rethinking lockdowns, Joffe, 2020	“Lockdowns have also resulted in a wide-range of unintended ramifications. Economic damage, delays in “non-urgent” surgeries, diagnoses, and treatments, and excess deaths arising from the “collateral effects” of lockdown measures should all be considered as policy-makers weigh future measures.Dr. Joffe argues that Canadians have been essentially presented with a “false dichotomy” – between a choice of either economically-damaging lockdowns or lethal inaction. However, his analysis finds that the costs of the lockdown measures compare poorly against their purported benefits when measured by Quality Adjusted Life Years, or QALY. “Various cost-benefit analyses from different countries, including some of these costs, have consistently estimated the cost in lives from lockdowns to be at least five to 10 times higher than the benefit, and likely far higher.”
142) Non-pharmaceutical public health measures for mitigating the risk and impact of epidemic and pandemic influenza, WHO, 2020	“Home quarantine of exposed individuals to reduce transmission is not recommended because there is no obvious rationale for this measure, and there would be considerable difficulties in implementing it.”
143) Projected deaths of despair from COVID-19, Well Being Trust, 2020	“More Americans could lose their lives to deaths of despair, deaths due to drug, alcohol, and suicide, if we do not do something immediately. Deaths of despair have been on the rise for the last decade, and in the context of COVID-19, deaths of despair should be seen as the epidemic within the pandemic.”
144) Dr Matthew Owens: Undoing the untold harms of COVID-19 on young people: a call to action, 2020	“A sense of proportion is now needed to help mitigate the negative impact of the ‘lockdown’ measures and encourage the healthy development and wellbeing of all young people.”
145) Stay at Home, Protect the National Health Service, Save Lives”: A cost benefit analysis of the lockdown in the United Kingdom, Miles, 2020	“The costs of continuing severe restrictions are so great relative to likely benefits in lives saved that a rapid easing in restrictions is now warranted.”
146) Great Barrington Declaration, Gupta, Kulldorff, Bhattacharya, 2020	“Both COVID-19 itself and the lockdown policy reactions have had enormous adverse consequences for patients in the US and around the world. While the harm from COVID-19 infections are well represented in news stories every day, the harms from lockdowns themselves are less well advertised, but no less important. The patients hurt by missed medical visits and hospitalizations due to lockdowns are as worthy of attention and policy response as are patients afflicted by COVID-19 infection.”
147) Sweden saw lower 2020 death spike than much of Europe – data, Ahlander, 2021	“Sweden, which has shunned the strict lockdowns that have choked much of the global economy, emerged from 2020 with a smaller increase in its overall mortality rate than most European countries, an analysis of official data sources showed.”

148) Open Letter from Medical Doctors and Health Professionals to All Belgian Authorities and All Belgian Media, AIER, 2020	"If we compare the waves of infection in countries with strict lockdown policies to countries that did not impose lockdowns (Sweden, Iceland …), we see similar curves. So there is no link between the imposed lockdown and the course of the infection. Lockdown has not led to a lower mortality rate."
149) Will Months of Remote Learning Worsen Students' Attention Problems? Harwin, 2020	"Robert is working from home again, along with over 50 million students, as schools in 48 states have shut down in-person classes to curb the spread of the novel coronavirus. How will the long absence from traditional school routines affect Robert and the millions of other students across the country who struggle with self-control, focus, or mental flexibility?"
150) COVID-19 Mandates Will Not Work for the Delta Variant, Alexander, 2021	"Yet the elites are far removed from the ramifications of their nonsensical, illogical, specious policies and edicts. Dictates that do not apply to them or their families or friends. The 'laptop' affluent class could vacate, work remotely, walk their dogs and pets, catch up on reading their books, and do tasks they could not do had they been in the workplace daily. They could hire extra teachers for their children etc. Remote working was a boon. The actions of our governments however, devastated and long-term hurt the poor in societies and terribly and perversely so, and many could not hold on and committed suicide. AIER's Ethan Yang's analysis showed that deaths of despair skyrocketed. Poor children, especially in richer western nations such as the US and Canada, self-harmed and ended their lives, not due to the pandemic virus, but due to the lockdowns and school closures. Many children took their own lives out of despair, depression, and hopelessness due to the lockdowns and school closures."
151) Open letter from medical doctors and health professionals to all Belgian authorities and all Belgian media, The American Institute of Stress, 2020	"If we compare the waves of infection in countries with strict lockdown policies to countries that did not impose lockdowns (Sweden, Iceland …), we see similar curves. So there is no link between the imposed lockdown and the course of the infection. Lockdown has not led to a lower mortality rate. If we look at the date of application of the imposed lockdowns we see that the lockdowns were set after the peak was already over and the number of cases decreasing. The drop was therefore not the result of the taken measures."
152) Lockdown Scepticism Was Never a 'Fringe' Viewpoint, Carl, 2021	"Whether or not lockdowns are justifiable on public-health grounds, they certainly represent the greatest infringement on civil liberties in modern history. In the UK, lockdowns have contributed to the largest economic contraction in more than 300 years, as well as countless bankruptcies, and a dramatic rise in public borrowing."

153) Actuaries warn Ramaphosa of a 'humanitarian disaster to dwarf Covid-19′ if restrictive lockdown is not lifted, Bell, 2020	"The frequently voiced government mantra that lives are being prioritised and that the issue is "lives versus the economy" is described in the Panda report as a false dichotomy. The report notes: "Viruses kill. But the economy sustains lives, and poverty kills too."It points out that the admitted intention of the lockdown is to "flatten the curve", to spread expected virus deaths over time, so as not to overburden hospital systems. This "saves lives to the extent that avoidable deaths are prevented, but merely shifts the timing of the rest by some weeks."
154) THE STATE OF THE NATION: A 50-STATE COVID-19 SURVEY REPORT #23: DEPRESSION AMONG YOUNG ADULTS, Perlis, 2020	"In line with our May results, our survey indicates that the next administration will lead a country where unprecedented numbers of younger individuals are experiencing depression, anxiety, and, for some, thoughts of suicide. These symptoms are not concentrated among any particular subgroup or region in our survey; they are elevated in every group we examined. Our survey results also strongly suggest that those with direct economic and property losses resulting from COVID-19 appear to be at particular risk, so strategies focusing on these individuals may be critical."
155) COVID-19 to Add as Many as 150 Million Extreme Poor by 2021, The World Bank, 2020	"Global extreme poverty is expected to rise in 2020 for the first time in over 20 years as the disruption of the COVID-19 pandemic compounds the forces of conflict and climate change, which were already slowing poverty reduction progress, the World Bank said today.The COVID-19 pandemic is estimated to push an additional 88 million to 115 million people into extreme poverty this year, with the total rising to as many as 150 million by 2021, depending on the severity of the economic contraction. Extreme poverty, defined as living on less than $1.90 a day, is likely to affect between 9.1% and 9.4% of the world's population in 2020, according to the biennial Poverty and Shared Prosperity Report. This would represent a regression to the rate of 9.2% in 2017. Had the pandemic not convulsed the globe, the poverty rate was expected to drop to 7.9% in 2020."
156) The impact of COVID-19 on heart failure hospitalization and management: report from a Heart Failure Unit in London during the peak of the pandemic, Bromage, 2020	"Incident AHF hospitalization significantly declined in our centre during the COVID-19 pandemic, but hospitalized patients had more severe symptoms at admission. Further studies are needed to investigate whether the incidence of AHF declined or patients did not present to hospital while the national lockdown and social distancing restrictions were in place. From a public health perspective, it is imperative to ascertain whether this will be associated with worse long-term outcomes."

157) For the Greater Good? The Devastating Ripple Effects of the Covid-19 Crisis, Schippers, 2020	The side effects so far seem to outweigh the positive effects and a recent historical overview of outbreaks concludes that: “History suggests that we are actually at much greater risk of exaggerated fears and misplaced priorities” (Jones D. S., 2020; p. 1683). The main side effects are: Excess mortality from causes other such as hunger, delayed health care, increase in effects mental health issues, suicide, increase in diseases such as measles, and increased inequalities due to school closures and job loss. These have ripple effects throughout society. In many countries emergency admissions, e.g., for cardiac chest pain and transient ischemic attacks, are decreased by about 50%, as people are avoiding hospital visits, which eventually will lead to higher death rates from other causes, such as heart attack and strokes (Sarner, 2020). Also, many medical treatments such as chemotherapy have not been given and were postponed (Sud et al., 2020). In terms of mental health effects, vulnerable groups, such as people with prior mental health issues might be at especially high risk (Jeong et al., 2016). Indeed, a survey by Young Minds revealed that up to 80% of young people with a history of mental health issues reported a worsening of their condition as a result of the pandemic and lockdown measures (Sarner, 2020). The mental health effects arguably affect the general population as a whole, and it has been suggested that this will be a global catastrophe (Izaguirre-Torres and Siche, 2020).
158) COVID-19 emergency measures and the impending authoritarian pandemic, Thomson, 2020	“Yet, as this Article demonstrates—with diverse examples drawn from across the world—there are unmistakable regressions into authoritarianism in governmental efforts to contain the virus. Despite the unprecedented nature of this challenge, there is no sound justification for systemic erosion of rights-protective democratic ideals and institutions beyond that which is strictly demanded by the exigencies of the pandemic. A Wuhan-inspired all-or-nothing approach to viral containment sets a dangerous precedent for future pandemics and disasters, with the global copycat response indicating an impending ‘pandemic’ of a different sort, that of authoritarianization. With a gratuitous toll being inflicted on democracy, civil liberties, fundamental freedoms, healthcare ethics, and human dignity, this has the potential to unleash humanitarian crises no less devastating than COVID-19 in the long run.”
159) Falling living standards during the COVID-19 crisis: Quantitative evidence from nine developing countries, Egger, 2021	“Document declines in employment and income in all settings beginning March 2020. The share of households experiencing an income drop ranges from 8 to 87% (median, 68%). Household coping strategies and government assistance were insufficient to sustain precrisis living standards, resulting in widespread food insecurity and dire economic conditions even 3 months into the crisis. We discuss promising policy responses and speculate about the risk of persistent adverse effects, especially among children and other vulnerable groups.”

160) COVID-19 and the Political Economy of Mass Hysteria, Bagus, 2021	"The violation of basic human rights in the form of curfews, lockdowns, and coercive closure of business has been amply illustrated during the COVID-19 crisis. Naturally, the COVID-19 example is indicative rather than representative and its lessons cannot be generalized. During the COVID-19 crisis, several authors have argued that from a public health point of view, these invasive interventions such as lockdowns have been unnecessary and, indeed, detrimental to overall public health. In fact, prior scientific research on disease mitigation measures during a possible influenza pandemic had warned against such invasive interventions and recommended a more normal social functioning."
161) COVID-19 mortalities in England and Wales and the Peltzman offsetting effect, Williams, 2021	"Our results suggest: (i) a refined estimate of mean weekly COVID-19 excess deaths that is 63% of standard excess deaths; and (ii) a positive net excess mortality impact of the lockdown. We make a case that (ii) is due to the Peltzman offsetting effect, i.e. the intended mortality impact of the lockdown was more than offset by the unintended impact."
162) Progression of COVID-19 under the highly restrictive measures imposed in Argentina, Sagripanti, 2021	"The number of yearly deaths caused by respiratory diseases and influenza in Argentina before the pandemic was similar to the total number of deaths attributed to COVID-19 cumulated on April 25, 2021, more than a year after the pandemic started. The failure to detect any benefit on ameliorating COVID-19 by the long and strict nation-wide lock-downs in Argentina should raise world-wide concerns about mandating costly and ineffective restrictive measures during ongoing or future pandemics."
163) COVID-19 in South Africa, Broadbent, 2020	"This does not show that locking down made no difference relative to a counterfactual scenario (and a full analysis would need to consider provincial trajectories too), but it does mean that a detailed (and provincial) analysis needs to be undertaken before we can evaluate the effectiveness of lockdown measures in the South African context. Were we to try to "read off" the effect of the interventions from the shape of the epidemic, we would have to conclude they had no effect. Likewise we would have to attribute the slow progress of the epidemic in the country to background features (e.g. the relative youthfulness of the population). This is a caution against such "reading off" both in this context and others."
164) The effects of non-pharmaceutical interventions on SARS-CoV-2 transmission in different socioeconomic populations in Kuwait: a modeling study., Khadadah, 2021	"Our simulated epidemic trajectories show that the partial curfew measure greatly reduced and delayed the height of the peak in P1, yet significantly elevated and hastened the peak in P2. Modest cross-transmission between P1 and P2 greatly elevated the height of the peak in P1 and brought it forward in time closer to the peak of P2."
165) Hard, not early: putting the New Zealand Covid-19 response in context, Gibson, 2020	"The cross-country evidence shows that restrictions imposed after the inflection point in infections is reached are ineffective in reducing total deaths. Even restrictions imposed earlier have just a modest effect."

166) The SARS-CoV-2 Pandemic in High Income Countries Such as Canada: A Better Way Forward Without Lockdowns, Joffe, 2021	“Specifically, there are three priorities including the following: first, protect those most at risk by separating them from the threat (mitigation); second, ensure critical infrastructure is ready for people who get sick (preparation and response); and third, shift the response from fear to confidence (recovery). We argue that, based on Emergency Management principles, the age-dependent risk from SARS-CoV-2, the minimal (at best) efficacy of lockdowns, and the terrible cost-benefit trade-offs of lockdowns, we need to reset the pandemic response. We can manage risk and save more lives from both COVID-19 and lockdowns, thus achieving far better outcomes in both the short- and long-term.”
167) On the effectiveness of COVID-19 restrictions and lockdowns: Pan metron ariston, Spiliopoulos, 2021	“Governments conditioned policy choice on recent pandemic dynamics, and were found to de-escalate the associated stringency of implemented NPIs more cautiously than in their escalation, i.e., policy mixes exhibited significant hysteresis. Finally, at least 90% of the maximum effectiveness of NPIs can be achieved by policies with an average Stringency index of 31–40, without restricting internal movement or imposing stay at home measures, and only recommending (not enforcing) closures on workplaces and schools, accompanied by public informational campaigns. Consequently, the positive effects on case and death growth rates of voluntary behavioral changes in response to beliefs about the severity of the pandemic, generally trumped those arising from mandatory behavioral restrictions.”
168) Covid-19: Comparisons by Country and Implications for Future Pandemics, Mehl-Madrona, 2021	“While no lockdown resulted in higher mortality, the difference between strict lockdown and lax lockdown was not terribly different and favored lax lockdown. Only one of the top 44 countries had long and strict restrictions. Strict restrictions were more common in the worst performing countries in terms of Covid mortality. The United States had both the largest economic growth coupled with the largest rate of mortality. Those who did well economically, had lower mortality and less pressure on their population. Yet they had less mortality than average and less than their neighbors.”
169) Does Social Isolation Really Curb COVID-19 Deaths? Direct Evidence from Brazil that it Might do the Exact Opposite, de Souza, 2020	“There appears to be strong empirical evidence that, in Brazil, the adoption of restrictive measures increasing social isolation have worsened the pandemic in that country instead of mitigating it, likely as a higher-order effect emerging from a combination of factors.”

170) The tiered restrictions enforced in November 2020 did not impact the epidemiology of the second wave of COVID-19 in Italy, Rainisio, 2021	"The trend of R(t) tending to increase shortly after the measures became effective does not allow to exclude that the enforcement of such restrictions might have been counterproductive. These results are instrumental in informing public health efforts aimed at attempting to manage the epidemic efficiently. Planning further use of the tiered restrictions and the associated containment measures should be carefully and critically revised to avoid a useless burden to the population with no advantage for the containment of the epidemic or a possible worsening."
171) LITERATURE REVIEW AND META-ANALYSIS OF THE EFFECTS OF LOCKDOWNS ON COVID-19 MORTALITY, Herby, 2022	"Study employed a systematic search and screening procedure in which 18,590 studies are identified that could potentially address the belief posed. After three levels of screening, 34 studies ultimately qualified. Of those 34 eligible studies, 24 qualified for inclusion in the meta-analysis. They were separated into three groups: lockdown stringency index studies, shelter-in-place order (SIPO) studies, and specific NPI studies. An analysis of each of these three groups support the conclusion that lockdowns have had little to no effect on COVID-19 mortality. More specifically, stringency index studies find that lockdowns in Europe and the United States only reduced COVID-19 mortality by 0.2% on average. SIPOs were also ineffective, only reducing COVID-19 mortality by 2.9% on average. Specific NPI studies also find no broad-based evidence of noticeable effects on COVID-19 mortality. While this meta-analysis concludes that lockdowns have had little to no public health effects, they have imposed enormous economic and social costs where they have been adopted. In consequence, lockdown policies are ill-founded and should be rejected as a pandemic policy instrument."
172) A Final Report Card on the States' Response to COVID-19, Kerpen, 2022	"The outcomes in NJ, NY, and CA were among the worst in all three categories: mortality, economy, and schooling. UT, NE, and VT were leaders in all three categories. The scores have a clear spatial pattern, perhaps reflecting spatial correlations in demographic, economic, and political variables…three states stand out as having combined scores well above the others: Utah, Nebraska, and Vermont. They were substantially above average in all three categories. Six more states followed, including Montana and South Dakota almost two standard deviations above the average in terms of economy but 0.8 to 1.0 below in terms of mortality (i.e., higher death rates). New Hampshire and Maine were about 1.5 standard deviations above average on mortality while also somewhat above average economically. Although sometimes criticized as having policies that were "too open," Florida proved to have average mortality while maintaining a high level of economic activity and 96 percent open schools."

173) NBER, Non-Covid Excess Deaths, 2020-21: Collateral Damage of Policy Choices?, Mulligan, 2022	"From April 2020 through at least the end of 2021, Americans died from non-Covid causes at an average annual rate 97,000 in excess of previous trends. Hypertension and heart disease deaths combined were elevated 32,000. Diabetes or obesity, drug-induced causes, and alcohol-induced causes were each elevated 12,000 to 15,000 above previous (upward) trends. Drug deaths especially followed an alarming trend, only to significantly exceed it during the pandemic to reach 108,000 for calendar year 2021. Homicide and motor-vehicle fatalities combined were elevated almost 10,000. Various other causes combined to add 18,000. While Covid deaths overwhelmingly afflict senior citizens, absolute numbers of non-Covid excess deaths are similar for each of the 18-44, 45-64, and over-65 age groups, with essentially no aggregate excess deaths of children. Mortality from all causes during the pandemic was elevated 26 percent for working-age adults (18-64), as compared to 18 percent for the elderly. Other data on drug addictions, non-fatal shootings, weight gain, and cancer screenings point to a historic, yet largely unacknowledged, health emergency."
174) Evaluating the Effect of Lockdowns On All-Cause Mortality During the COVID Era: Lockdowns Did Not Save Lives, Rancourt & Johnson, 2022	"The USA and its 50 state jurisdictions provide a natural experiment to test whether excess all-cause deaths can be directly attributed to implementing the social and economic structural large-scale changes induced by ordering general-population lockdowns. Ten states had no lockdown impositions and there are 38 pairs of lockdown/non-lockdown states that share a land border. We find that the regulatory imposition and enforcement of statewide shelter-in-place or stay-at-home orders conclusively correlates with larger health-status-corrected, per capita, all-cause mortality by state. This result is inconsistent with the hypothesis that lockdowns saved lives."
SCHOOL CLOSURES	
1) Suffering in silence: How COVID-19 school closures inhibit the reporting of child maltreatment, Baron, 2020	"While one would expect the financial, mental, and physical stress due to COVID-19 to result in additional child maltreatment cases, we find that the actual number of reported allegations was approximately 15,000 lower (27%) than expected for these two months. We leverage a detailed dataset of school district staffing and spending to show that the observed decline in allegations was largely driven by school closures."
2) Association of routine school closures with child maltreatment reporting and substantiation in the United States; 2010-2017, Puls, 2021	"Results suggest that the detection of child maltreatment may be diminished during periods of routine school closure."
3) Reporting of child maltreatment during the SARS-CoV-2 pandemic in New York City from March to May 2020, Rapoport, 2021	"Precipitous drops in child maltreatment reporting and child welfare interventions coincided with social distancing policies designed to mitigate COVID-19 transmission."

4) Calculating the impact of COVID-19 pandemic on child abuse and neglect in the U.S, Nguyen, 2021	“The COVID-19 pandemic has led to a precipitous drop in CAN investigations where almost 200,000 children are estimated to have been missed for prevention services and CAN in a 10-month period.”
5) Effect of school closures on mortality from coronavirus disease 2019: old and new predictions, Rice, 2020	“We therefore conclude that the somewhat counterintuitive results that school closures lead to more deaths are a consequence of the addition of some interventions that suppress the first wave and failure to prioritise protection of the most vulnerable people. When the interventions are lifted, there is still a large population who are susceptible and a substantial number of people who are infected. This then leads to a second wave of infections that can result in more deaths, but later. Further lockdowns would lead to a repeating series of waves of infection unless herd immunity is achieved by vaccination, which is not considered in the model. A similar result is obtained in some of the scenarios involving general social distancing. For example, adding general social distancing to case isolation and household quarantine was also strongly associated with suppression of the infection during the intervention period, but then a second wave occurs that actually concerns a higher peak demand for ICU beds than for the equivalent scenario without general social distancing.”
6) Schools Closures during the COVID-19 Pandemic: A Catastrophic Global Situation, Buonsenso, 2020	“This extreme measure provoked a disruption of the educational system involving hundreds of million children worldwide. The return of children to school has been variable and is still an unresolved and contentious issue. Importantly the process has not been directly correlated to the severity of the pandemic s impact and has fueled the widening of disparities, disproportionately affecting the most vulnerable populations. Available evidence shows SC added little benefit to COVID-19 control whereas the harms related to SC severely affected children and adolescents. This unresolved issue has put children and young people at high risk of social, economic and health-related harm for years to come, triggering severe consequences during their lifespan.”
7) The Impact of COVID-19 School Closure on Child and Adolescent Health: A Rapid Systematic Review, Chaabane, 2021	“COVID-19-related school closure was associated with a significant decline in the number of hospital admissions and pediatric emergency department visits. However, a number of children and adolescents lost access to school-based healthcare services, special services for children with disabilities, and nutrition programs. A greater risk of widening educational disparities due to lack of support and resources for remote learning were also reported among poorer families and children with disabilities. School closure also contributed to increased anxiety and loneliness in young people and child stress, sadness, frustration, indiscipline, and hyperactivity. The longer the duration of school closure and reduction of daily physical activity, the higher was the predicted increase of Body Mass Index and childhood obesity prevalence.”

8) School Closures and Social Anxiety During the COVID-19 Pandemic, Morrissette, 2020	“Reported on the effects that social isolation and loneliness may have on children and adolescents during the global 2019 novel coronavirus disease (COVID-19) pandemic, with their findings suggesting associations between social anxiety and loneliness/social isolation.”
9) Parental job loss and infant health, Lindo, 2011	“Husbands’ job losses have significant negative effects on infant health. They reduce birth weights by approximately four and a half percent.”
10) Closing schools is not evidence based and harms children, Lewis, 2021	“For some children education is their only way out of poverty; for others school offers a safe haven away from a dangerous or chaotic home life. Learning loss, reduced social interaction, isolation, reduced physical activity, increased mental health problems, and potential for increased abuse, exploitation, and neglect have all been associated with school closures. Reduced future income6 and life expectancy are associated with less education. Children with special educational needs or who are already disadvantaged are at increased risk of harm.”
11) Impacts of school closures on physical and mental health of children and young people: a systematic review, Viner, 2021	“School closures as part of broader social distancing measures are associated with considerable harms to CYP health and wellbeing. Available data are short-term and longer-term harms are likely to be magnified by further school closures. Data are urgently needed on longer-term impacts using strong research designs, particularly amongst vulnerable groups. These findings are important for policy-makers seeking to balance the risks of transmission through school-aged children with the harms of closing schools.”

12) School Closure: A Careful Review of the Evidence, Alexander, 2020	"Based on the existing reviewed evidence, the predominant finding is that children (particularly young children) are at very low risk of acquiring SARS-CoV-2 infection, and if they do become infected, are at very low risk of spreading it among themselves or to other children in the school setting, of spreading it to their teachers, or of spreading it to other adults or to their parents, or of taking it into the home setting; children typically become infected from the home setting/clusters and adults are typically the index case; children are at very low risk of severe illness or death from COVID-19 disease except in very rare circumstances; children do not drive SARS-CoV-2/COVID-19 as they do seasonal influenza; an age gradient as to susceptibility and transmission capacity exists whereby older children should not be treated the same as younger children in terms of ability to transmit e.g. a 6 year-old versus a 17 year-old (as such, public health measures would be different in an elementary school versus a high/secondary school); 'very low risk' can also be considered 'very rare' (not zero risk, but negligible, very rare); we argue that masking and social distancing for young children is unsound policy and not needed and if social distancing is to be used, that 3-feet is suitable over 6-feet and will address the space limitations in schools; we argue that we are well past the point where we must replace hysteria and fear with knowledge and fact. The schools must be immediately re-opened for in-person instruction as there is no reason to do otherwise."
13) Children, school and COVID-19, RIVM, 2021	"If we look at all hospital admissions reported by the NICE Foundation between 1 January and 16 November 2021, 0.7% were younger than 4 years old. 0.1% were aged 4-11 years and 0.2% were aged 12-17 years. The vast majority (99.0%) of all people admitted to hospital with COVID-19 were aged 18 years or older."
14) FEW CARRIERS, FEW TRANSMITTERS": A STUDY CONFIRMS THE MINIMAL ROLE OF CHILDREN IN THE COVID-19 EPIDEMIC, Vincendon, 2020	"Children are few carriers, few transmitters, and when they are contaminated, it is almost always adults in the family who have contaminated them."
15) Transmission of SARS-CoV-2 in children aged 0 to 19 years in childcare facilities and schools after their reopening in May 2020, Baden-Württemberg, Germany, Ehrhardt, 2020	"Investigated data from severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infected 0-19 year olds, who attended schools/childcare facilities, to assess their role in SARS-CoV-2 transmission after these establishments' reopening in May 2020 in Baden-Württemberg, Germany. Child-to-child transmission in schools/childcare facilities appeared very uncommon."

16) Australian Health Protection Principal Committee (AHPPC) coronavirus (COVID-19) statements on 24 April 2020, Australian government, 2020	"AHPPC continues to note that there is very limited evidence of transmission between children in the school environment; population screening overseas has shown very low incidence of positive cases in school-aged children. In Australia, 2.4 per cent of confirmed cases have been in children aged between 5 and 18 years of age (as at 6am, 22 April 2020). AHPPC believes that adults in the school environment should practice room density measures (such as in staff rooms) given the greater risk of transmission between adults."
17) AN EVIDENCE SUMMARY OF PAEDIATRIC COVID-19 LITERATURE, Boast, 2021	"Critical illness is very rare (~1%). In data from China, the USA and Europe, there is a "U shaped" risk gradient, with infants and older adolescents appear most likely to be hospitalised and to suffer from more severe disease. Deaths in children remain extremely rare from COVID-19, with only 4 deaths in the UK as of May 2020 in children <15 years, all in children with serious comorbidities."
18) Transmission dynamics of SARS-CoV-2 within families with children in Greece: A study of 23 clusters, Maltezou, 2020	"While children become infected by SARS-CoV-2, they do not appear to transmit infection to others."
19) No evidence of secondary transmission of COVID-19 from children attending school in Ireland, 2020, Heavey, 2020	"Children are thought to be vectors for transmission of many respiratory diseases including influenza. It was assumed that this would be true for COVID-19 also. To date however, evidence of widespread paediatric transmission has failed to emerge. School closures create childcare issues for parents. This has an impact on the workforce, including the healthcare workforce. There are also concerns about the impact of school closures on children's mental and physical health… examination of all Irish paediatric cases of COVID-19 attending school during the pre-symptomatic and symptomatic periods of infection (n = 3) identified no cases of onward transmission to other children or adults within the school and a variety of other settings. These included music lessons (woodwind instruments) and choir practice, both of which are high-risk activities for transmission. Furthermore, no onward transmission from the three identified adult cases to children was identified."
20) COVID-19, school closures, and child poverty: a social crisis in the making, Van Lancker, 2020	"The UN Educational, Scientific and Cultural Organization estimates that 138 countries have closed schools nationwide, and several other countries have implemented regional or local closures. These school closures are affecting the education of 80% of children worldwide. Although scientific debate is ongoing with regard to the effectiveness of school closures on virus transmission, the fact that schools are closed for a long period of time could have detrimental social and health consequences for children living in poverty, and are likely to exacerbate existing inequalities."

21) Impact of school closures for COVID-19 on the US health-care workforce and net mortality: a modelling study, Bayham, 2020	"School closures come with many trade-offs, and can create unintended child-care obligations. Our results suggest that the potential contagion prevention from school closures needs to be carefully weighted with the potential loss of health-care workers from the standpoint of reducing cumulative mortality due to COVID-19, in the absence of mitigating measures."
22) The Truth About Kids, School, and COVID-19, Thompson/The Atlantic, 2021	"The CDC's judgment comes at a particularly fraught moment in the debate about kids, schools, and COVID-19. Parents are exhausted. Student suicides are surging. Teachers' unions are facing national opprobrium for their reluctance to return to in-person instruction. And schools are already making noise about staying closed until 2022… Research from around the world has, since the beginning of the pandemic, indicated that people under 18, and especially younger kids, are less susceptible to infection, less likely to experience severe symptoms, and far less likely to be hospitalized or die…in May 2020, a small Irish study of young students and education workers with COVID-19 interviewed more than 1,000 contacts and found "no case of onward transmission" to any children or adults. In June 2020, a Singapore study of three COVID-19 clusters found that "children are not the primary drivers" of outbreaks and that "the risk of SARS-CoV-2 transmission among children in schools, especially preschools, is likely to be low."
23) Feared coronavirus outbreaks in schools yet to arrive, early data shows, Meckler/The Washington Post, 2020	"This early evidence, experts say, suggests that opening schools may not be as risky as many have feared and could guide administrators as they chart the rest of what is already an unprecedented school year. Everyone had a fear there would be explosive outbreaks of transmission in the schools. In colleges, there have been. We have to say that, to date, we have not seen those in the younger kids, and that is a really important observation."
24) Three studies highlight low COVID risk of in-person school, CIDRAP, 2021	"A trio of new studies demonstrate low risk of COVID-19 infection and spread in schools, including limited in-school COVID-19 transmission in North Carolina, few cases of the coronavirus-associated multisystem inflammatory syndrome in children (MIS-C) in Swedish schools, and minimal spread of the virus from primary school students in Norway."
25) Incidence and Secondary Transmission of SARS-CoV-2 Infections in Schools, Zimmerman, 2021	"In the first 9 weeks of in-person instruction in North Carolina schools, we found extremely limited within-school secondary transmission of SARS-CoV-2, as determined by contact tracing."

26) Open Schools, Covid-19, and Child and Teacher Morbidity in Sweden, Ludvigsson, 2020	"Of the 1,951,905 children aged 1 to 16 years in Sweden as of Dec 31, 2019, 65 died in the pre-pandemic period of November 2019 to February 2020, compared with 69 in the pandemic period of March through June 2020. None of the deaths were caused by COVID-19. Fifteen children diagnosed as having COVID-19, including seven with MIS-C, were admitted to an intensive care unit (ICU) from March to June 2020 (0.77 per 100,000 children in this age-group). Four children required mechanical ventilation. Four children were 1 to 6 years old (0.54 per 100,000), and 11 were 7 to 16 (0.90 per 100,000). Four of the children had an underlying illness: 2 with cancer, 1 with chronic kidney disease, and 1 with a hematologic disease). Of the country's 103,596 preschool teachers and 20 schoolteachers, fewer than 10 were admitted to an ICU by Jun 30, 2020 (an equivalent of 19 per 100,000)."
27) Minimal transmission of SARS-CoV-2 from paediatric COVID-19 cases in primary schools, Norway, August to November 2020, Brandal, 2021	"This prospective study shows that transmission of SARS-CoV-2 from children under 14 years of age was minimal in primary schools in Oslo and Viken, the two Norwegian counties with the highest COVID-19 incidence and in which 35% of the Norwegian population resides. In a period of low to medium community transmission (a 14-day incidence of COVID-19 of < 150 cases per 100,000 inhabitants), when symptomatic children were asked to stay home from school, there were < 1% SARS-CoV-2–positive test results among child contacts and < 2% positive results in adult contacts in 13 contract tracings in Norwegian primary schools. In addition, self-collection of saliva for SARS-CoV-2 detection was efficient and sensitive (85% (11/13); 95% confidence interval: 55–98)… use of face masks is not recommended in schools in Norway. We found that with the IPC measures implemented there is low to no transmission from SARS-CoV-2–infected children in schools."
28) Children are unlikely to be the main drivers of the COVID-19 pandemic – A systematic review, Ludvigsson, 2020	"Identified 700 scientific papers and letters and 47 full texts were studied in detail. Children accounted for a small fraction of COVID-19 cases and mostly had social contacts with peers or parents, rather than older people at risk of severe disease…Children are unlikely to be the main drivers of the pandemic. Opening up schools and kindergartens is unlikely to impact COVID-19 mortality rates in older people."
29) Science Brief: Transmission of SARS-CoV-2 in K-12 Schools and Early Care and Education Programs – Updated, CDC, 2021	"Findings from several studies suggest that SARS-CoV-2 transmission among students is relatively rare, particularly when prevention strategies are in place…several studies have also concluded that students are not the primary sources of exposure to SARS-CoV-2 among adults in school setting."
30) Children under 10 less likely to drive COVID-19 outbreaks, research review says, Dobbins/McMaster, 2020	"The bottom line thus far is that children under 10 years of age are unlikely to drive outbreaks of COVID-19 in daycares and schools and that, to date, adults were much more likely to be the transmitter of infection than children."

31) Role of children in the transmission of the COVID-19 pandemic: a rapid scoping review, Rajmil, 2020	“Children are not transmitters to a greater extent than adults. There is a need to improve the validity of epidemiological surveillance to solve current uncertainties, and to take into account social determinants and child health inequalities during and after the current pandemic.”
32) COVID-19 in schools – the experience in NSW, NCIRS, 2020	“SARS-CoV-2 transmission in children in schools appears considerably less than seen for other respiratory viruses, such as influenza. In contrast to influenza, data from both virus and antibody testing to date suggest that children are not the primary drivers of COVID-19 spread in schools or in the community. This is consistent with data from international studies showing low rates of disease in children and suggesting limited spread among children and from children to adults.”
33) Spread of SARS-CoV-2 in the Icelandic Population, Gudbjartsson, 2020	“In a population-based study in Iceland, children under 10 years of age and females had a lower incidence of SARS-CoV-2 infection than adolescents or adults and males.”
34) Case-Fatality Rate and Characteristics of Patients Dying in Relation to COVID-19 in Italy, Onder, 2020	Infected children and females were less likely to have severe disease.
35) BC Center for Disease Control, BC Children’s hospital, 2020	“BC families reported impaired learning, increased child stress, and decreased connection during COVID-19 school closures, while global data show increased loneliness and declining mental health, including anxiety and depression… Provincial child protection reports have also declined significantly despite reported increased domestic violence globally. This suggests decreased detection of child neglect and abuse without reporting from schools… The impact of school closures is likely to be experienced disproportionately by families subject to social inequities, and those with children with health conditions or special learning needs. Interrupted access to school-based resources, connections, and support compounds the broader societal impact of the pandemic. In particular, there are likely to be greater effects on single parent families, families in poverty, working mothers, and those with unstable employment and housing.”
36) Transmission of SARS-CoV-2 in Australian educational settings: a prospective cohort study, Macartney, 2020	“SARS-CoV-2 transmission rates were low in NSW educational settings during the first COVID-19 epidemic wave, consistent with mild infrequent disease in the 1·8 million child population.”
37) COVID-19 Cases and Transmission in 17 K–12 Schools — Wood County, Wisconsin, August 31–November 29, 2020, CDC/Falk, 2021	“In a setting of widespread community SARS-CoV-2 transmission, few instances of in-school transmission were identified among students and staff members, with limited spread among children within their cohorts and no documented transmission to or from staff members.”

38) COVID-19 in children and the role of school settings in transmission – second update, ECDC, 2021	"Children aged between 1-18 years have much lower rates of hospitalisation, severe disease requiring intensive hospital care, and death than all other age groups, according to surveillance data…the decision to close schools to control the COVID-19 pandemic should be used as a last resort. The negative physical, mental and educational impacts of proactive school closures on children, as well as the economic impact on society more broadly, would likely outweigh the benefits.""Investigations of cases identified in school settings suggest that child to child transmission in schools is uncommon and not the primary cause of SARS-CoV-2 infection in children whose onset of infection coincides with the period during which they are attending school, particularly in preschools and primary school."
39) COVID-19 in children and young people, Snape, 2020	"The near-global closure of schools in response to the pandemic reflected the reasonable expectation from previous respiratory virus outbreaks that children would be a key component of the transmission chain. However, emerging evidence suggests that this is most likely not the case. A minority of children experience a postinfectious inflammatory syndrome, the pathology and long-term outcomes of which are poorly understood. However, relative to their risk of contracting disease, children and adolescents have been disproportionately affected by lockdown measures, and advocates of child health need to ensure that children's rights to health and social care, mental health support, and education are protected throughout subsequent pandemic waves…There are many other areas of potential indirect harm to children, including an increase in home injuries (accidental and nonaccidental) when children have been less visible to social protection systems because of lockdowns. In Italy, hospitalizations for accidents at home increased markedly during the COVID-19 lockdown and potentially posed a higher threat to children's health than COVID-19. UK pediatricians report that delay in presentations to hospital or disrupted services contributed to the deaths of equal numbers of children that were reported to have died with SARS-CoV-2 infection. Many countries are seeing evidence that mental health in young people has been adversely affected by school closures and lockdowns. For example, preliminary evidence suggests that deaths by suicide of young people under 18 years old increased during lockdown in England."
40) Clinical characteristics of children and young people admitted to hospital with covid-19 in United Kingdom: prospective multicentre observational cohort study, Swann, 2020	"Children and young people have less severe acute covid-19 than adults."

41) The Dangers of Keeping the Schools Closed, Yang, 2020	"The data from a range of countries shows that children rarely, and in many countries never, have died from this infection. Children appear to get infected at a much lower rate than those who are older… there is no evidence that children are important in transmitting the disease…What we know about social distancing policies is based largely on models of influenza, where children are a vulnerable group. However, preliminary data on COVID-19 suggests that children are a small fraction of cases and may be less vulnerable than older adults."
42) SARS-CoV-2 Infection in Children, Lu, 2020	"In contrast with infected adults, most infected children appear to have a milder clinical course. Asymptomatic infections were not uncommon."
43) Characteristics of and Important Lessons From the Coronavirus Disease 2019 (COVID-19) Outbreak in China: Summary of a Report of 72 314 Cases From the Chinese Center for Disease Control and Prevention, Wu, 2020	Less than 1% of the cases were in children younger than 10 years of age.
44) Risk for COVID-19 Infection, CDC, 2021	A CDC report on hospitalization and death in children, found that when compared to persons 18 to 29 years old, children 0 to 4 years had a 4x lower rate of hospitalization and a 9x lower rate of death. Children 5 to 17 years old had a 9x lower rate of hospitalization and a 16x lower rate of death.
45) Children are unlikely to have been the primary source of household SARS-CoV-2 infections, Zhu, 2020	"Whilst SARS-CoV-2 can cause mild disease in children, the data available to date suggests that children have not played a substantive role in the intra-household transmission of SARS-CoV-2."
46) Characteristics of Household Transmission of COVID-19, Li, 2020	"The secondary attack rate to children was 4% compared with 17.1% for adults."
47) Are The Risks Of Reopening Schools Exaggerated?, Kamenetz/NPR, 2020	"Despite widespread concerns, two new international studies show no consistent relationship between in-person K-12 schooling and the spread of the coronavirus. And a third study from the United States shows no elevated risk to childcare workers who stayed on the job…As a pediatrician, I am really seeing the negative impacts of these school closures on children," Dr. Danielle Dooley, a medical director at Children's National Hospital in Washington, D.C., told NPR. She ticked off mental health problems, hunger, obesity due to inactivity, missing routine medical care and the risk of child abuse — on top of the loss of education. "Going to school is really vital for children. They get their meals in school, their physical activity, their health care, their education, of course."
48) Child care not associated with spread of COVID-19, Yale study finds, YaleNews, 2020	"Findings show child care programs that remained open throughout the pandemic did not contribute to the spread of the virus to providers, lending valuable insight to parents, policymakers, and providers alike."

49) Reopening US Schools in the Era of COVID-19: Practical Guidance From Other Nations, Tanmoy Das, 2020	"There is evidence that, compared with adults, children are 3-fold less susceptible to infection, more likely to be asymptomatic, and less likely to be hospitalized and die. While rare reports of pediatric multi-inflammatory syndrome need to be monitored, its association with COVID-19 is extremely low and typically treatable."
50) Low-Income Children and Coronavirus Disease 2019 (COVID-19) in the US, Dooley, 2020	"Restrictions imposed because of the coronavirus make these challenges more formidable. While school districts are engaging in distance learning, reports indicate wide variability in access to quality educational instruction, digital technology, and internet access. Students in rural and urban school districts are faced with challenges accessing the internet. In some urban areas, as many as one-third of students are not participating in online classes. Chronic absenteeism, or missing 10% or more of the school year, affects educational outcomes, including reading levels, grade retention, graduation rates, and high school dropout rates. Chronic absenteeism already disproportionately affects children living in poverty. The consequences of missing months of school will be even more marked."
51) COVID-19 and school return: The need and necessity, Betz, 2020	"Of particular concern are the consequences for children who live in poverty. These children live in homes that have inadequate resources for virtual learning that will contribute to learning deficits, and thereby falling further behind with expected academic performance for grade level. Children from low-resourced homes are likely to have limited space for doing school work, inadequate temperature controls for heating and cooling and safe outdoor space for exercise (Van Lancker & Parolin, 2020). Furthermore, this group of children are at high risk for food insecurity as they may not have access to school lunches/breakfasts with school closures."
52) Children are not COVID-19 super spreaders: time to go back to school, Munro, 2020	"Evidence is therefore emerging that children could be significantly less likely to become infected than adults…At the current time, children do not appear to be super spreaders."
53) Cluster of Coronavirus Disease 2019 (COVID-19) in the French Alps, February 2020, Danis, 2020	"The index case stayed 4 days in the chalet with 10 English tourists and a family of 5 French residents; SARS-CoV-2 was detected in 5 individuals in France, 6 in England (including the index case), and 1 in Spain (overall attack rate in the chalet: 75%). One pediatric case, with picornavirus and influenza A coinfection, visited 3 different schools while symptomatic. One case was asymptomatic, with similar viral load as that of a symptomatic case…The fact that an infected child did not transmit the disease despite close interactions within schools suggests potential different transmission dynamics in children."

54) COVID-19 – research evidence summaries, RCPCH, 2020	"In children, the evidence is now clear that COVID-19 is associated with a considerably lower burden of morbidity and mortality compared to that seen in the elderly. There is evidence of critical illness and death in children, but it is rare. There is also some evidence that children may be less likely to acquire the infection. The role of children in transmission, once they have acquired the infection, is unclear, although there is no clear evidence that they are any more infectious than adults. Symptoms are non-specific and most commonly cough and fever."
55) Impact of COVID-19 and lockdown on mental health of children and adolescents: A narrative review with recommendations, Singh, 2020	"On these grounds, since January, 2020, various countries started implementing regional and national containment measures or lockdowns. In this backdrop one of the principal measures taken during lockdown has been closure of schools, educational institutes and activity areas. These inexorable circumstances which are beyond normal experience, lead to stress, anxiety and a feeling of helplessness in all."
56) Absence of SARS-CoV-2 Transmission from Children in Isolation to Guardians, South Korea, Lee/EID, 2021	"Did not observe SARS-CoV-2 transmission from children to guardians in isolation settings in which close proximity would seem to increase transmission risk. Recent studies have suggested that children are not the main drivers of the COVID-19 pandemic, although the reasons remain unclear."
57) COVID-19 National Emergency Response Center, Epidemiology and Case Management Team. Contact tracing during coronavirus disease outbreak, South Korea, 2020, Park/EID, 2020	"A large study on contacts of COVID-19 case-patients in South Korea observed that household transmission was lowest when the index case-patient was 0–9 years of age."
58) COVID-19 in Children and the Dynamics of Infection in Families, Posfay-Barbe, 2020	"In 79% of households, ≥1 adult family member was suspected or confirmed for COVID-19 before symptom onset in the study child, confirming that children are infected mainly inside familial clusters. Surprisingly, in 33% of households, symptomatic HHCs tested negative despite belonging to a familial cluster with confirmed SARS-CoV-2 cases, suggesting an underreporting of cases. In only 8% of households did a child develop symptoms before any other HHC, which is in line with previous data in which it is shown that children are index cases in <10% of SARS-CoV-2 familial clusters."

59) COVID-19 Transmission and Children: The Child Is Not to Blame, Lee, 2020	“Report on the dynamics of COVID-19 within families of children with reverse-transcription polymerase chain reaction–confirmed SARS-CoV-2 infection in Geneva, Switzerland. From March 10 to April 10, 2020, all children <16 years of age diagnosed at Geneva University Hospital (N = 40) underwent contact tracing to identify infected household contacts (HHCs). Of 39 evaluable households, in only 3 (8%) was a child the suspected index case, with symptom onset preceding illness in adult HHCs. In all other households, the child developed symptoms after or concurrent with adult HHCs, suggesting that the child was not the source of infection and that children most frequently acquire COVID-19 from adults, rather than transmitting it to them.”“In intriguing study from France, a 9-year-old boy with respiratory symptoms associated with picornavirus, influenza A, and SARS-CoV-2 coinfection was found to have exposed over 80 classmates at 3 schools; no secondary contacts became infected, despite numerous influenza infections within the schools, suggesting an environment conducive to respiratory virus transmission.”“In New South Wales, Australia, 9 students and 9 staff infected with SARS-CoV-2 across 15 schools had close contact with a total of 735 students and 128 staff. Only 2 secondary infections were identified, none in adult staff; 1 student in primary school was potentially infected by a staff member, and 1 student in high school was potentially infected via exposure to 2 infected schoolmates.”
60) Role of children in household transmission of COVID-19, Kim, 2020	“A total of 107 paediatric COVID-19 index cases and 248 of their household members were identified. One pair of paediatric index-secondary household case was identified, giving a household SAR of 0.5% (95% CI 0.0% to 2.6%).”
61) Secondary attack rate in household contacts of COVID-19 Paediatric index cases: a study from Western India, Shah, 2021	“The household SAR from pediatric patients is low.”
62) Household Transmission of SARS-CoV-2: A Systematic Review and Meta-analysis, Madewell, 2021	“Household secondary attack rates were increased from symptomatic index cases (18.0%; 95% CI, 14.2%-22.1%) than from asymptomatic index cases (0.7%; 95% CI, 0%-4.9%), to adult contacts (28.3%; 95% CI, 20.2%-37.1%) than to child contacts (16.8%; 95% CI, 12.3%-21.7%).”
63) Children and Adolescents With SARS-CoV-2 Infection, Maltezou, 2020	“Child-to-adult transmission was found in one occasion only.”
64) Severe Acute Respiratory Syndrome-Coronavirus-2 Transmission in an Urban Community: The Role of Children and Household Contacts, Pitman-Hunt, 2021	“A household sick contact was identified in fewer than half (42%) of patients and no child-to-adult transmission was identified.”

65) A Meta-analysis on the Role of Children in Severe Acute Respiratory Syndrome Coronavirus 2 in Household Transmission Clusters, Zhu, 2020	“The secondary attack rate in pediatric household contacts was lower than in adult household contacts (RR, 0.62; 95% CI, 0.42-0.91). These data have important implications for the ongoing management of the COVID-19 pandemic, including potential vaccine prioritization strategies.”
66) The role of children in transmission of SARS-CoV-2: A rapid review, Li, 2020	“Preliminary results from population-based and school-based studies suggest that children may be less frequently infected or infect others.”
67) Novel Coronavirus 2019 Transmission Risk in Educational Settings, Yung, 2020	“The data suggest that children are not the primary drivers of SARS-CoV-2 transmission in schools and could help inform exit strategies for lifting of lockdowns.”
68) INTERPOL report highlights impact of COVID-19 on child sexual abuse, Interpol, 2020	“Key environmental, social and economic factor changes due to COVID-19 which have impacted child sexual exploitation and abuse (CSEA) across the world include:closure of schools and subsequent movement to virtual learning environments;increased time children spend online for entertainment, social and educational purposes;restriction of international travel and the repatriation of foreign nationals;limited access to community support services, child care and educational personnel who often play a key role in detecting and reporting cases of child sexual exploitation.”
69) Do school closures reduce community transmission of COVID-19? A systematic review of observational studies, Walsh, 2021	“With such varied evidence on effectiveness, and the harmful effects, policymakers should take a measured approach before implementing school closures.”
70) Association between living with children and outcomes from COVID-19: an OpenSAFELY cohort study of 12 million adults in England, Forbes, 2020	“For adults living with children there is no evidence of an increased risk of severe COVID-19 outcomes. These findings have implications for determining the benefit-harm balance of children attending school in the COVID-19 pandemic.”
71) School closure and management practices during coronavirus outbreaks including COVID-19: a rapid systematic review, Viner, 2020	“Data from the SARS outbreak in mainland China, Hong Kong, and Singapore suggest that school closures did not contribute to the control of the epidemic.”
72) Non-pharmaceutical public health measures for mitigating the risk and impact of epidemic and pandemic influenza, WHO, 2020	“The effect of reactive school closure in reducing influenza transmission varied but was generally limited.”

73) New research finds no evidence that schools are playing a significant role in driving spread of the Covid-19 virus in the community, Warwick, 2021	"New research led by epidemiologists at the University of Warwick has found that there is no significant evidence that schools are playing a significant role in driving the spread of the Covid-19 disease in the community, particularly in primary schools…our analysis of recorded school absences as a result of infection with COVID-19 suggest that the risk is much lower in primary than secondary schools and we do not find evidence to suggest that school attendance is a significant driver of outbreaks in the community."
74) When schools shut: New UNESCO study exposes failure to factor gender in COVID-19 education responses, UNESCO, 2021	"As governments brought remote learning solutions to scale to respond to the pandemic, speed, rather than equity in access and outcomes, appears to have been the priority. Initial COVID-19 responses seem to have been developed with little attention to inclusiveness, raising the risk of increased marginalization… Most countries across all income groups report providing teachers with different forms of support. Few programmes, however, helped teachers recognize the gender risks, disparities and inequalities that emerged during COVID-19 closures. Female teachers also have been largely expected to take on a dual role to ensure continuity of learning for their students, while facing additional childcare and unpaid domestic responsibilities in their homes during school closures."
75) School Closures Have Failed America's Children, Kristof, 2021	"Flags are flying at half-staff across the United States to commemorate the half-million American lives lost to the coronavirus. But there's another tragedy we haven't adequately confronted: Millions of American schoolchildren will soon have missed a year of in-person instruction, and we may have inflicted permanent damage on some of them, and on our country… But the educational losses are disproportionately the fault of Democratic governors and mayors who too often let schools stay closed even as bars opened."
76) The effects of school closures on SARS-CoV-2 among parents and teachers, Vlachos, 2020	"The results for parents indicate that keeping lower-secondary schools open had minor consequences for the overall transmission of SARS-CoV-2 in society."
77) The Effects of School Reopenings on COVID-19 Hospitalizations, Harris, 2021	"We find no effect of in-person school reopening on COVID-19 hospitalization rates."
78) Shut and re-open: the role of schools in the spread of COVID-19 in Europe, Stage, 2021	"Limited school attendance, such as older students sitting exams or the partial return of younger year groups, does not appear to significantly affect community transmission. In countries where community transmission is generally low, such as Denmark or Norway, a large-scale reopening of schools while controlling or suppressing the epidemic appears feasible."

79) COVID-19 incidence, hospitalizations and mortality trends in Croatia and school closures, Simetin, 2021	"The observed inconsistent pattern indicates that there were no association of school openings and COVID-19 morbidity and mortality trends in Croatia and that other factors were leading to increasing and decreasing numbers. This emphasizes the need to consider the introduction of other effective and less harmful measures by stakeholders, or at least to use school closures as a last resort."
80) A cross-sectional and prospective cohort study of the role of schools in the SARS-CoV-2 second wave in Italy, Gandini, 2021	"This analysis does not support a role for school opening as a driver of the second COVID-19 wave in Italy, a large European country with high SARS-CoV-2 incidence."
81) The Role of Schools in Transmission of the SARS-CoV-2 Virus: Quasi-Experimental Evidence from Germany, Bismarck-Osten, 2021	"Show that neither the summer closures nor the closures in the fall had a significant containing effect on the spread of SARS-CoV-2 among children or a spill-over effect on older generations. There is also no evidence that the return to school at full capacity after the summer holidays increased infections among children or adults. Instead, we find that the number of children infected increased during the last weeks of the summer holiday and decreased in the first weeks after schools reopened, a pattern we attribute to travel returnees."
82) No causal effect of school closures in Japan on the spread of COVID-19 in spring 2020, Fukumoto, 2021	"We do not find any evidence that school closures in Japan reduced the spread of COVID-19. Our null results suggest that policies on school closures should be reexamined given the potential negative consequences for children and parents."
83) Transmission of SARS-CoV-2 in Norwegian schools: A population-wide register-based cohort study on characteristics of the index case and secondary attack rates, Rotevatn, 2021	"Results confirm that schools have not been an important arena of transmission of SARS-CoV-2 in Norway and therefore support that schools can be kept open with IPC measures in place."
84) COVID-19 Mitigation Practices and COVID-19 Rates in Schools: Report on Data from Florida, New York and Massachusetts, Oster, 2021	"Find higher student COVID-19 rates in schools and districts with lower in-person density but no correlations in staff rates. Ventilation upgrades are correlated with lower rates in Florida but not in New York. We do not find any correlations with mask mandates."
MASKS-INEFFECTIVENESS	
1) Effectiveness of Adding a Mask Recommendation to Other Public Health Measures to Prevent SARS-CoV-2 Infection in Danish Mask Wearers, Bundgaard, 2021	"Infection with SARS-CoV-2 occurred in 42 participants recommended masks (1.8%) and 53 control participants (2.1%). The between-group difference was −0.3 percentage point (95% CI, −1.2 to 0.4 percentage point; P = 0.38) (odds ratio, 0.82 [CI, 0.54 to 1.23]; P = 0.33). Multiple imputation accounting for loss to follow-up yielded similar results…the recommendation to wear surgical masks to supplement other public health measures did not reduce the SARS-CoV-2 infection rate among wearers by more than 50% in a community with modest infection rates, some degree of social distancing, and uncommon general mask use."

2) SARS-CoV-2 Transmission among Marine Recruits during Quarantine, Letizia, 2020	"Our study showed that in a group of predominantly young male military recruits, approximately 2% became positive for SARS-CoV-2, as determined by qPCR assay, during a 2-week, strictly enforced quarantine. Multiple, independent virus strain transmission clusters were identified…all recruits wore double-layered cloth masks at all times indoors and outdoors."
3) Physical interventions to interrupt or reduce the spread of respiratory viruses, Jefferson, 2020	"There is low certainty evidence from nine trials (3507 participants) that wearing a mask may make little or no difference to the outcome of influenza-like illness (ILI) compared to not wearing a mask (risk ratio (RR) 0.99, 95% confidence interval (CI) 0.82 to 1.18. There is moderate certainty evidence that wearing a mask probably makes little or no difference to the outcome of laboratory-confirmed influenza compared to not wearing a mask (RR 0.91, 95% CI 0.66 to 1.26; 6 trials; 3005 participants)…the pooled results of randomised trials did not show a clear reduction in respiratory viral infection with the use of medical/surgical masks during seasonal influenza."
4) The Impact of Community Masking on COVID-19: A Cluster-Randomized Trial in Bangladesh, Abaluck, 2021 Heneghan et al.	A cluster-randomized trial of community-level mask promotion in rural Bangladesh from November 2020 to April 2021 (N=600 villages, N=342,126 adults. Heneghan writes: "In a Bangladesh study, surgical masks reduced symptomatic COVID infections by between 0 and 22 percent, while the efficacy of cloth masks led to somewhere between an 11 percent increase to a 21 percent decrease. Hence, based on these randomized studies, adult masks appear to have either no or limited efficacy."
5) Evidence for Community Cloth Face Masking to Limit the Spread of SARS-CoV-2: A Critical Review, Liu/CATO, 2021	"The available clinical evidence of facemask efficacy is of low quality and the best available clinical evidence has mostly failed to show efficacy, with fourteen of sixteen identified randomized controlled trials comparing face masks to no mask controls failing to find statistically significant benefit in the intent-to-treat populations. Of sixteen quantitative meta-analyses, eight were equivocal or critical as to whether evidence supports a public recommendation of masks, and the remaining eight supported a public mask intervention on limited evidence primarily on the basis of the precautionary principle."
6) Nonpharmaceutical Measures for Pandemic Influenza in Nonhealthcare Settings—Personal Protective and Environmental Measures, CDC/Xiao, 2020	"Evidence from 14 randomized controlled trials of these measures did not support a substantial effect on transmission of laboratory-confirmed influenza…none of the household studies reported a significant reduction in secondary laboratory-confirmed influenza virus infections in the face mask group…the overall reduction in ILI or laboratory-confirmed influenza cases in the face mask group was not significant in either studies."

7) CIDRAP: Masks-for-all for COVID-19 not based on sound data, Brosseau, 2020	"We agree that the data supporting the effectiveness of a cloth mask or face covering are very limited. We do, however, have data from laboratory studies that indicate cloth masks or face coverings offer very low filter collection efficiency for the smaller inhalable particles we believe are largely responsible for transmission, particularly from pre- or asymptomatic individuals who are not coughing or sneezing…though we support mask wearing by the general public, we continue to conclude that cloth masks and face coverings are likely to have limited impact on lowering COVID-19 transmission, because they have minimal ability to prevent the emission of small particles, offer limited personal protection with respect to small particle inhalation, and should not be recommended as a replacement for physical distancing or reducing time in enclosed spaces with many potentially infectious people."
8) Universal Masking in Hospitals in the Covid-19 Era, Klompas/NEJM, 2020	"We know that wearing a mask outside health care facilities offers little, if any, protection from infection. Public health authorities define a significant exposure to Covid-19 as face-to-face contact within 6 feet with a patient with symptomatic Covid-19 that is sustained for at least a few minutes (and some say more than 10 minutes or even 30 minutes). The chance of catching Covid-19 from a passing interaction in a public space is therefore minimal. In many cases, the desire for widespread masking is a reflexive reaction to anxiety over the pandemic…The calculus may be different, however, in health care settings. First and foremost, a mask is a core component of the personal protective equipment (PPE) clinicians need when caring for symptomatic patients with respiratory viral infections, in conjunction with gown, gloves, and eye protection… universal masking alone is not a panacea. A mask will not protect providers caring for a patient with active Covid-19 if it's not accompanied by meticulous hand hygiene, eye protection, gloves, and a gown. A mask alone will not prevent health care workers with early Covid-19 from contaminating their hands and spreading the virus to patients and colleagues. Focusing on universal masking alone may, paradoxically, lead to more transmission of Covid-19 if it diverts attention from implementing more fundamental infection-control measures."
9) Masks for prevention of viral respiratory infections among health care workers and the public: PEER umbrella systematic review, Dugré, 2020	"This systematic review found limited evidence that the use of masks might reduce the risk of viral respiratory infections. In the community setting, a possible reduced risk of influenza-like illness was found among mask users. In health care workers, the results show no difference between N95 masks and surgical masks on the risk of confirmed influenza or other confirmed viral respiratory infections, although possible benefits from N95 masks were found for preventing influenza-like illness or other clinical respiratory infections. Surgical masks might be superior to cloth masks but data are limited to 1 trial."

10) Effectiveness of personal protective measures in reducing pandemic influenza transmission: A systematic review and meta-analysis, Saunders-Hastings, 2017	"Facemask use provided a non-significant protective effect (OR = 0.53; 95% CI 0.16–1.71; I^2 = 48%) against 2009 pandemic influenza infection."
11) Experimental investigation of indoor aerosol dispersion and accumulation in the context of COVID-19: Effects of masks and ventilation, Shah, 2021	"Nevertheless, high-efficiency masks, such as the KN95, still offer substantially higher apparent filtration efficiencies (60% and 46% for R95 and KN95 masks, respectively) than the more commonly used cloth (10%) and surgical masks (12%), and therefore are still the recommended choice in mitigating airborne disease transmission indoors."
12) Exercise with facemask; Are we handling a devil's sword?- A physiological hypothesis, Chandrasekaran, 2020	"Exercising with facemasks may reduce available Oxygen and increase air trapping preventing substantial carbon dioxide exchange. The hypercapnic hypoxia may potentially increase acidic environment, cardiac overload, anaerobic metabolism and renal overload, which may substantially aggravate the underlying pathology of established chronic diseases. Further contrary to the earlier thought, no evidence exists to claim the facemasks during exercise offer additional protection from the droplet transfer of the virus."
13) Surgical face masks in modern operating rooms–a costly and unnecessary ritual?, Mitchell, 1991	"Following the commissioning of a new suite of operating rooms air movement studies showed a flow of air away from the operating table towards the periphery of the room. Oral microbial flora dispersed by unmasked male and female volunteers standing one metre from the table failed to contaminate exposed settle plates placed on the table. The wearing of face masks by non-scrubbed staff working in an operating room with forced ventilation seems to be unnecessary."
14) Facemask against viral respiratory infections among Hajj pilgrims: A challenging cluster-randomized trial, Alfelali, 2020	"By intention-to-treat analysis, facemask use did not seem to be effective against laboratory-confirmed viral respiratory infections (odds ratio [OR], 1.4; 95% confidence interval [CI], 0.9 to 2.1, p = 0.18) nor against clinical respiratory infection (OR, 1.1; 95% CI, 0.9 to 1.4, p = 0.40)."
15) Simple respiratory protection–evaluation of the filtration performance of cloth masks and common fabric materials against 20-1000 nm size particles, Rengasamy, 2010	"Results obtained in the study show that common fabric materials may provide marginal protection against nanoparticles including those in the size ranges of virus-containing particles in exhaled breath."
16) Respiratory performance offered by N95 respirators and surgical masks: human subject evaluation with NaCl aerosol representing bacterial and viral particle size range, Lee, 2008	"The study indicates that N95 filtering facepiece respirators may not achieve the expected protection level against bacteria and viruses. An exhalation valve on the N95 respirator does not affect the respiratory protection; it appears to be an appropriate alternative to reduce the breathing resistance."
17) Aerosol penetration and leakage characteristics of masks used in the health care industry, Weber, 1993	"We conclude that the protection provided by surgical masks may be insufficient in environments containing potentially hazardous sub-micrometer-sized aerosols."

18) Disposable surgical face masks for preventing surgical wound infection in clean surgery, Vincent, 2016	"We included three trials, involving a total of 2106 participants. There was no statistically significant difference in infection rates between the masked and unmasked group in any of the trials…from the limited results it is unclear whether the wearing of surgical face masks by members of the surgical team has any impact on surgical wound infection rates for patients undergoing clean surgery."
19) Disposable surgical face masks: a systematic review, Lipp, 2005	"From the limited results it is unclear whether wearing surgical face masks results in any harm or benefit to the patient undergoing clean surgery."
20) Comparison of the Filter Efficiency of Medical Nonwoven Fabrics against Three Different Microbe Aerosols, Shimasaki, 2018	"We conclude that the filter efficiency test using the phi-X174 phage aerosol may overestimate the protective performance of nonwoven fabrics with filter structure compared to that against real pathogens such as the influenza virus."
21) The use of masks and respirators to preventtransmission of influenza: a systematic review of thescientific evidence21) The use of masks and respirators to prevent transmission of influenza: a systematic review of the scientific evidence, Bin-Reza, 2012	The use of masks and respirators to preventtransmission of influenza: a systematic review of thescientific evidence"None of the studies established a conclusive relationship between mask/respirator use and protection against influenza infection. Some evidence suggests that mask use is best undertaken as part of a package of personal protection especially hand hygiene."
22) Facial protection for healthcare workers during pandemics: a scoping review, Godoy, 2020	"Compared with surgical masks, N95 respirators perform better in laboratory testing, may provide superior protection in inpatient settings and perform equivalently in outpatient settings. Surgical mask and N95 respirator conservation strategies include extended use, reuse or decontamination, but these strategies may result in inferior protection. Limited evidence suggests that reused and improvised masks should be used when medical-grade protection is unavailable."
23) Assessment of Proficiency of N95 Mask Donning Among the General Public in Singapore, Yeung, 2020	"These findings support ongoing recommendations against the use of N95 masks by the general public during the COVID-19 pandemic.[5] N95 mask use by the general public may not translate into effective protection but instead provide false reassurance. Beyond N95 masks, proficiency among the general public in donning surgical masks needs to be assessed."
24) Evaluating the efficacy of cloth facemasks in reducing particulate matter exposure, Shakya, 2017	"Standard N95 mask performance was used as a control to compare the results with cloth masks, and our results suggest that cloth masks are only marginally beneficial in protecting individuals from particles<2.5 μm."
25) Use of surgical face masks to reduce the incidence of the common cold among health care workers in Japan: a randomized controlled trial, Jacobs, 2009	"Face mask use in health care workers has not been demonstrated to provide benefit in terms of cold symptoms or getting colds."

26) N95 Respirators vs Medical Masks for Preventing Influenza Among Health Care Personnel, Radonovich, 2019	“Among outpatient health care personnel, N95 respirators vs medical masks as worn by participants in this trial resulted in no significant difference in the incidence of laboratory-confirmed influenza.”
27) Does Universal Mask Wearing Decrease or Increase the Spread of COVID-19?, Watts up with that? 2020	“A survey of peer-reviewed studies shows that universal mask wearing (as opposed to wearing masks in specific settings) does not decrease the transmission of respiratory viruses from people wearing masks to people who are not wearing masks.”
28) Masking: A Careful Review of the Evidence, Alexander, 2021	“In fact, it is not unreasonable at this time to conclude that surgical and cloth masks, used as they currently are, have absolutely no impact on controlling the transmission of Covid-19 virus, and current evidence implies that face masks can be actually harmful.”
29) Community and Close Contact Exposures Associated with COVID-19 Among Symptomatic Adults ≥18 Years in 11 Outpatient Health Care Facilities — United States, July 2020, Fisher, 2020	Reported characteristics of symptomatic adults ≥18 years who were outpatients in 11 US academic health care facilities and who received positive and negative SARS-CoV-2 test results (N = 314)* — United States, July 1–29, 2020, revealed that 80% of infected persons wore face masks almost all or most of the time.
30) Impact of non-pharmaceutical interventions against COVID-19 in Europe: a quasi-experimental study, Hunter, 2020	Face masks in public was not associated with reduced incidence.
31) Masking lack of evidence with politics, CEBM, Heneghan, 2020	“It would appear that despite two decades of pandemic preparedness, there is considerable uncertainty as to the value of wearing masks. For instance, high rates of infection with cloth masks could be due to harms caused by cloth masks, or benefits of medical masks. The numerous systematic reviews that have been recently published all include the same evidence base so unsurprisingly broadly reach the same conclusions.”
32) Transmission of COVID-19 in 282 clusters in Catalonia, Spain: a cohort study, Marks, 2021	“We observed no association of risk of transmission with reported mask usage by contacts, with the age or sex of the index case, or with the presence of respiratory symptoms in the index case at the initial study visit.”
33) Non-pharmaceutical public health measures for mitigating the risk and impact of epidemic and pandemic influenza, WHO, 2020	“Ten RCTs were included in the meta-analysis, and there was no evidence that face masks are effective in reducing transmission of laboratory-confirmed influenza.”

34) The Strangely Unscientific Masking of America, Younes, 2020	"One report reached its conclusion based on observations of a "dummy head attached to a breathing simulator." Another analyzed use of surgical masks on people experiencing at least two symptoms of acute respiratory illness. Incidentally, not one of these studies involved cloth masks or accounted for real-world mask usage (or misusage) among lay people, and none established efficacy of widespread mask-wearing by people not exhibiting symptoms. There was simply no evidence whatsoever that healthy people ought to wear masks when going about their lives, especially outdoors."
35) Facemasks and similar barriers to prevent respiratory illness such as COVID-19: A rapid systematic review, Brainard, 2020	"31 eligible studies (including 12 RCTs). Narrative synthesis and random-effects meta-analysis of attack rates for primary and secondary prevention in 28 studies were performed. Based on the RCTs we would conclude that wearing facemasks can be very slightly protective against primary infection from casual community contact, and modestly protective against household infections when both infected and uninfected members wear facemasks. However, the RCTs often suffered from poor compliance and controls using facemasks."
36) The Year of Disguises, Koops, 2020	"The healthy people in our society should not be punished for being healthy, which is exactly what lockdowns, distancing, mask mandates, etc. do…Children should not be wearing face coverings. We all need constant interaction with our environments and that is especially true for children. This is how their immune system develops. They are the lowest of the low-risk groups. Let them be kids and let them develop their immune systems… The "Mask Mandate" idea is a truly ridiculous, knee-jerk reaction and needs to be withdrawn and thrown in the waste bin of disastrous policy, along with lockdowns and school closures. You can vote for a person without blindly supporting all of their proposals!"
37) Open Schools, Covid-19, and Child and Teacher Morbidity in Sweden, Ludvigsson, 2020	"1,951,905 children in Sweden (as of December 31, 2019) who were 1 to 16 years of age, were examined…social distancing was encouraged in Sweden, but wearing face masks was not…No child with Covid-19 died."
38) Double-Masking Benefits Are Limited, Japan Supercomputer Finds, Reidy, 2021	"Wearing two masks offers limited benefits in preventing the spread of droplets that could carry the coronavirus compared to one well-fitted disposable mask, according to a Japanese study that modeled the dispersal of droplets on a supercomputer."
39) Physical interventions to interrupt or reduce the spread of respiratory viruses. Part 1 – Face masks, eye protection and person distancing: systematic review and meta-analysis, Jefferson, 2020	"There was insufficient evidence to provide a recommendation on the use of facial barriers without other measures. We found insufficient evidence for a difference between surgical masks and N95 respirators and limited evidence to support effectiveness of quarantine."

40) Should individuals in the community without respiratory symptoms wear facemasks to reduce the spread of COVID-19?, NIPH, 2020	“Non-medical facemasks include a variety of products. There is no reliable evidence of the effectiveness of non-medical facemasks in community settings. There is likely to be substantial variation in effectiveness between products. However, there is only limited evidence from laboratory studies of potential differences in effectiveness when different products are used in the community.”
41) Is a mask necessary in the operating theatre?, Orr, 1981	“It would appear that minimum contamination can best be achieved by not wearing a mask at all but operating in silence. Whatever its relation to contamination, bacterial counts, or the dissemination of squames, there is no direct evidence that the wearing of masks reduces wound infection.”
42) The surgical mask is a bad fit for risk reduction, Neilson, 2016	“As recently as 2010, the US National Academy of Sciences declared that, in the community setting, “face masks are not designed or certified to protect the wearer from exposure to respiratory hazards.” A number of studies have shown the inefficacy of the surgical mask in household settings to prevent transmission of the influenza virus.”
43) Facemask versus No Facemask in Preventing Viral Respiratory Infections During Hajj: A Cluster Randomised Open Label Trial, Alfelali, 2019	“Facemask use does not prevent clinical or laboratory-confirmed viral respiratory infections among Hajj pilgrims.”
44) Facemasks in the COVID-19 era: A health hypothesis, Vainshelboim, 2021	“The existing scientific evidences challenge the safety and efficacy of wearing facemask as preventive intervention for COVID-19. The data suggest that both medical and non-medical facemasks are ineffective to block human-to-human transmission of viral and infectious disease such SARS-CoV-2 and COVID-19, supporting against the usage of facemasks. Wearing facemasks has been demonstrated to have substantial adverse physiological and psychological effects. These include hypoxia, hypercapnia, shortness of breath, increased acidity and toxicity, activation of fear and stress response, rise in stress hormones, immunosuppression, fatigue, headaches, decline in cognitive performance, predisposition for viral and infectious illnesses, chronic stress, anxiety and depression.”
45) The use of masks and respirators to prevent transmission of influenza: a systematic review of the scientific evidence, Bin-Reza, 2011	“None of the studies established a conclusive relationship between mask/respirator use and protection against influenza infection. Some evidence suggests that mask use is best undertaken as part of a package of personal protection especially hand hygiene.”
46) Are Face Masks Effective? The Evidence., Swiss Policy Research, 2021	“Most studies found little to no evidence for the effectiveness of face masks in the general population, neither as personal protective equipment nor as a source control.”

47) Postoperative wound infections and surgical face masks: A controlled study, Tunevall, 1991	"These results indicate that the use of face masks might be reconsidered. Masks may be used to protect the operating team from drops of infected blood and from airborne infections, but have not been proven to protect the patient operated by a healthy operating team."
48) Mask mandate and use efficacy in state-level COVID-19 containment, Guerra, 2021	"Mask mandates and use are not associated with slower state-level COVID-19 spread during COVID-19 growth surges."
49) Twenty Reasons Mandatory Face Masks are Unsafe, Ineffective and Immoral, Manley, 2021	"A CDC-funded review on masking in May 2020 came to the conclusion: "Although mechanistic studies support the potential effect of hand hygiene or face masks, evidence from 14 randomized controlled trials of these measures did not support a substantial effect on transmission of laboratory-confirmed influenza… None of the household studies reported a significant reduction in secondary laboratory-confirmed influenza virus infections in the face mask group." If masks can't stop the regular flu, how can they stop SAR-CoV-2?"
50) A cluster randomised trial of cloth masks compared with medical masks in healthcare workers, MacIntyre, 2015	"First RCT of cloth masks, and the results caution against the use of cloth masks. This is an important finding to inform occupational health and safety. Moisture retention, reuse of cloth masks and poor filtration may result in increased risk of infection…the rates of all infection outcomes were highest in the cloth mask arm, with the rate of ILI statistically significantly higher in the cloth mask arm (relative risk (RR)=13.00, 95% CI 1.69 to 100.07) compared with the medical mask arm. Cloth masks also had significantly higher rates of ILI compared with the control arm. An analysis by mask use showed ILI (RR=6.64, 95% CI 1.45 to 28.65) and laboratory-confirmed virus (RR=1.72, 95% CI 1.01 to 2.94) were significantly higher in the cloth masks group compared with the medical masks group. Penetration of cloth masks by particles was almost 97% and medical masks 44%."
51) Horowitz: Data from India continues to blow up the 'Delta' fear narrative, Blazemedia, 2021	"Rather than proving the need to sow more panic, fear, and control over people, the story from India — the source of the "Delta" variant — continues to refute every current premise of COVID fascism…Masks failed to stop the spread there."
52) An outbreak caused by the SARS-CoV-2 Delta variant (B.1.617.2) in a secondary care hospital in Finland, May 2021, Hetemäki, 2021	Reporting on a nosocomial hospital outbreak in Finland, Hetemäli et al. observed that "both symptomatic and asymptomatic infections were found among vaccinated health care workers, and secondary transmission occurred from those with symptomatic infections despite use of personal protective equipment."

53) Nosocomial outbreak caused by the SARS-CoV-2 Delta variant in a highly vaccinated population, Israel, July 2021, Shitrit, 2021	In a hospital outbreak investigation in Israel, Shitrit et al. observed “high transmissibility of the SARS-CoV-2 Delta variant among twice vaccinated and masked individuals.” They added that “this suggests some waning of immunity, albeit still providing protection for individuals without comorbidities.” Again, despite use of personal protective equipment.
54) 47 studies confirm ineffectiveness of masks for COVID and 32 more confirm their negative health effects, Lifesite news staff, 2021	“No studies were needed to justify this practice since most understood viruses were far too small to be stopped by the wearing of most masks, other than sophisticated ones designed for that task and which were too costly and complicated for the general public to properly wear and keep changing or cleaning. It was also understood that long mask wearing was unhealthy for wearers for common sense and basic science reasons.”
55) Are EUA Face Masks Effective in Slowing the Spread of a Viral Infection?, Dopp, 2021	The vast evidence shows that masks are ineffective.
56) CDC Study finds overwhelming majority of people getting coronavirus wore masks, Boyd/Federalist, 2021	“A Centers for Disease Control report released in September shows that masks and face coverings are not effective in preventing the spread of COVID-19, even for those people who consistently wear them.”
57) Most Mask Studies Are Garbage, Eugyppius, 2021	“The other kind of study, the proper kind, would be a randomised controlled trial. You compare the rates of infection in a masked cohort against rates of infection in an unmasked cohort. Here things have gone much, much worse for mask brigade. They spent months trying to prevent the publication of the Danish randomised controlled trial, which found that masks do zero. When that paper finally squeaked into print, they spent more months trying desperately to poke holes in it. You could feel their boundless relief when the Bangladesh study finally appeared to save them in early September. Every last Twitter blue-check could now proclaim that Science Shows Masks Work. Such was their hunger for any scrap of evidence to prop up their prior convictions, that none of them noticed the sad nature of the Science in question. The study found a mere 10% reduction in seroprevalence among the masked cohort, an effect so small that it fell within the confidence interval. Even the study authors couldn’t exclude the possibility that masks in fact do zero.”
58) Using face masks in the community: first update, ECDC, 2021	“No high-quality evidence in favor of face masks and recommended their use only based on the ‘precautionary principle.”

59) Do physical measures such as hand-washing or wearing masks stop or slow down the spread of respiratory viruses?, Cochrane, 2020	"Seven studies took place in the community, and two studies in healthcare workers. Compared with wearing no mask, wearing a mask may make little to no difference in how many people caught a flu-like illness (9 studies; 3507 people); and probably makes no difference in how many people have flu confirmed by a laboratory test (6 studies; 3005 people). Unwanted effects were rarely reported, but included discomfort."
60) Mouth-nose protection in public: No evidence of effectiveness, Thieme/ Kappstein, 2020	"The use of masks in public spaces is questionable simply because of the lack of scientific data. If one also considers the necessary precautions, masks must even be considered a risk of infection in public spaces according to the rules known from hospitals… If masks are worn by the population, the risk of infection is potentially increased, regardless of whether they are medical masks or whether they are so-called community masks designed in any way. If one considers the precautionary measures that the RKI as well as the international health authorities have pronounced, all authorities would even have to inform the population that masks should not be worn in public spaces at all. Because no matter whether it is a duty for all citizens or voluntarily borne by the citizens who want it for whatever reason, it remains a fact that masks can do more harm than good in public."
61) US mask guidance for kids is the strictest across the world, Skelding, 2021	"Kids need to see faces," Jay Bhattacharya, a professor of medicine at Stanford University, told The Post. Youngsters watch people's mouths to learn to speak, read and understand emotions, he said."We have this idea that this disease is so bad that we must adopt any means necessary to stop it from spreading," he said. "It's not that masks in schools have no costs. They actually do have substantial costs."
62) Masking young children in school harms language acquisition, Walsh, 2021	"This is important because children and/or students do not have the speech or language ability that adults have — they are not equally able and the ability to see the face and especially the mouth is critical to language acquisition which children and/or students are engaged in at all times. Furthermore, the ability to see the mouth is not only essential to communication but also essential to brain development."

63) The Case Against Masks for Children, Makary, 2021	"It's abusive to force kids who struggle with them to sacrifice for the sake of unvaccinated adults… Do masks reduce Covid transmission in children? Believe it or not, we could find only a single retrospective study on the question, and its results were inconclusive. Yet two weeks ago the Centers for Disease Control and Prevention sternly decreed that 56 million U.S. children and adolescents, vaccinated or not, should cover their faces regardless of the prevalence of infection in their community. Authorities in many places took the cue to impose mandates in schools and elsewhere, on the theory that masks can't do any harm. That isn't true. Some children are fine wearing a mask, but others struggle. Those who have myopia can have difficulty seeing because the mask fogs their glasses. (This has long been a problem for medical students in the operating room.) Masks can cause severe acne and other skin problems. The discomfort of a mask distracts some children from learning. By increasing airway resistance during exhalation, masks can lead to increased levels of carbon dioxide in the blood. And masks can be vectors for pathogens if they become moist or are used for too long."
64) Face Covering Mandates, Peavey, 2021	"Face Covering Mandates And Why They AREN'T Effective."
65) Do masks work? A Review of the evidence, Anderson, 2021	"In truth, the CDC's, U.K.'s, and WHO's earlier guidance was much more consistent with the best medical research on masks' effectiveness in preventing the spread of viruses. That research suggests that Americans' many months of mask-wearing has likely provided little to no health benefit and might even have been counterproductive in preventing the spread of the novel coronavirus."
66) Most face masks won't stop COVID-19 indoors, study warns, Anderer, 2021	"New research reveals that cloth masks filter just 10% of exhaled aerosols, with many people not wearing coverings that fit their face properly."
67) How face masks and lockdowns failed/the face mask folly in retrospect, Swiss Policy Research, 2021	"Mask mandates and lockdowns have had no discernible impact."
68) CDC Releases School COVID Transmission Study But Buries One of the Most Damning Parts, Davis, 2021	"The 21% lower incidence in schools that required mask use among students was not statistically significant compared with schools where mask use was optional… With tens of millions of American kids headed back to school in the fall, their parents and political leaders owe it to them to have a clear-sighted, scientifically rigorous discussion about which anti-COVID measures actually work and which might put an extra burden on vulnerable young people without meaningfully or demonstrably slowing the spread of the virus…that a masking requirement of students failed to show independent benefit is a finding of consequence and great interest."

69) World Health Organization internal meeting, COVID-19 – virtual press conference – 30 March 2020, 2020	"This is a question on Austria. The Austrian Government has a desire to make everyone wear a mask who's going into the shops. I understood from our previous briefings with you that the general public should not wear masks because they are in short supply. What do you say about the new Austrian measures?… I'm not specifically aware of that measure in Austria. I would assume that it's aimed at people who potentially have the disease not passing it to others. In general WHO recommends that the wearing of a mask by a member of the public is to prevent that individual giving the disease to somebody else. We don't generally recommend the wearing to masks in public by otherwise well individuals because it has not been up to now associated with any particular benefit."
70) Face masks to prevent transmission of influenza virus: a systematic review, Cowling, 2010	"Review highlights the limited evidence base supporting the efficacy or effectiveness of face masks to reduce influenza virus transmission.""None of the studies reviewed showed a benefit from wearing a mask, in either HCW or community members in households (H)."
71) Effectiveness of N95 respirators versus surgical masks in protecting health care workers from acute respiratory infection: a systematic review and meta-analysis, Smith, 2016	"Although N95 respirators appeared to have a protective advantage over surgical masks in laboratory settings, our meta-analysis showed that there were insufficient data to determine definitively whether N95 respirators are superior to surgical masks in protecting health care workers against transmissible acute respiratory infections in clinical settings."
72) Effectiveness of Masks and Respirators Against Respiratory Infections in Healthcare Workers: A Systematic Review and Meta-Analysis, Offeddu, 2017	"We found evidence to support universal medical mask use in hospital settings as part of infection control measures to reduce the risk of CRI and ILI among HCWs. Overall, N95 respirators may convey greater protection, but universal use throughout a work shift is likely to be less acceptable due to greater discomfort…Our analysis confirms the effectiveness of medical masks and respirators against SARS. Disposable, cotton, or paper masks are not recommended. The confirmed effectiveness of medical masks is crucially important for lower-resource and emergency settings lacking access to N95 respirators. In such cases, single-use medical masks are preferable to cloth masks, for which there is no evidence of protection and which might facilitate transmission of pathogens when used repeatedly without adequate sterilization…We found no clear benefit of either medical masks or N95 respirators against pH1N1…Overall, the evidence to inform policies on mask use in HCWs is poor, with a small number of studies that is prone to reporting biases and lack of statistical power."
73) N95 Respirators vs Medical Masks for Preventing Influenza Among Health Care Personnel, Radonovich, 2019	"Use of N95 respirators, compared with medical masks, in the outpatient setting resulted in no significant difference in the rates of laboratory-confirmed influenza."

Effectiveness of N95 respirators versus surgical masks againstinfluenza: A systematic review and meta-analysis74) Masks Don't Work: A Review of Science Relevant to COVID-19 Social Policy, Rancourt, 2020	The use of N95 respirators compared with surgical masks is not associated with alower risk of laboratory-confirmed influenza. It suggests that N95 respirators should not be rec-ommended for general public and nonhigh-risk medical staff those are not in close contact withinfluenza patients or suspected patients. "No RCT study with verified outcome shows a benefit for HCW or community members in households to wearing a mask or respirator. There is no such study. There are no exceptions. Likewise, no study exists that shows a benefit from a broad policy to wear masks in public (more on this below). Furthermore, if there were any benefit to wearing a mask, because of the blocking power against droplets and aerosol particles, then there should be more benefit from wearing a respirator (N95) compared to a surgical mask, yet several large meta-analyses, and all the RCT, prove that there is no such relative benefit."
75) More Than a Dozen Credible Medical Studies Prove Face Masks Do Not Work Even In Hospitals!, Firstenberg, 2020	"Mandating masks has not kept death rates down anywhere. The 20 U.S. states that have never ordered people to wear face masks indoors and out have dramatically lower COVID-19 death rates than the 30 states that have mandated masks. Most of the no-mask states have COVID-19 death rates below 20 per 100,000 population, and none have a death rate higher than 55. All 13 states that have death rates higher 55 are states that have required the wearing of masks in all public places. It has not protected them."
76) Does evidence based medicine support the effectiveness of surgical facemasks in preventing postoperative wound infections in elective surgery?, Bahli, 2009	"From the limited randomized trials it is still not clear that whether wearing surgical face masks harms or benefit the patients undergoing elective surgery."
77) Peritonitis prevention in CAPD: to mask or not?, Figueiredo, 2000	"The current study suggests that routine use of face masks during CAPD bag exchanges may be unnecessary and could be discontinued."
78) The operating room environment as affected by people and the surgical face mask, Ritter, 1975	"The wearing of a surgical face mask had no effect upon the overall operating room environmental contamination and probably work only to redirect the projectile effect of talking and breathing. People are the major source of environmental contamination in the operating room."
79) The efficacy of standard surgical face masks: an investigation using "tracer particles, Ha'eri, 1980	"Particle contamination of the wound was demonstrated in all experiments. Since the microspheres were not identified on the exterior of these face masks, they must have escaped around the mask edges and found their way into the wound."

80) Wearing of caps and masks not necessary during cardiac catheterization, Laslett, 1989	"Prospectively evaluated the experience of 504 patients undergoing percutaneous left heart catheterization, seeking evidence of a relationship between whether caps and/or masks were worn by the operators and the incidence of infection. No infections were found in any patient, regardless of whether a cap or mask was used. Thus, we found no evidence that caps or masks need to be worn during percutaneous cardiac catheterization."
81) Do anaesthetists need to wear surgical masks in the operating theatre? A literature review with evidence-based recommendations, Skinner, 2001	"A questionnaire-based survey, undertaken by Leyland' in 1993 to assess attitudes to the use of masks, showed that 20% of surgeons discarded surgical masks for endoscopic work. Less than 50% did not wear the mask as recommended by the Medical Research Council. Equal numbers of surgeons wore the mask in the belief they were protecting themselves and the patient, with 20% of these admitting that tradition was the only reason for wearing them."
82) Mask mandates for children are not backed by data, Faria, 2021	"Even if you want to use the 2018-19 flu season to avoid overlap with the start of the COVID-19 pandemic, the CDC paints a similar picture: It estimated 480 flu deaths among children during that period, with 46,000 hospitalizations. COVID-19, mercifully, is simply not as deadly for children. According to the American Academy of Pediatrics, preliminary data from 45 states show that between 0.00%-0.03% of child COVID-19 cases resulted in death. When you combine these numbers with the CDC study that found mask mandates for students — along with hybrid models, social distancing, and classroom barriers — did not have a statistically significant benefit in preventing the spread of COVID-19 in schools, the insistence that we force students to jump through these hoops for their own protection makes no sense."
83) The Downsides of Masking Young Students Are Real, Prasad, 2021	"The benefits of mask requirements in schools might seem self-evident—they have to help contain the coronavirus, right?—but that may not be so. In Spain, masks are used in kids ages 6 and older. The authors of one study there examined the risk of viral spread at all ages. If masks provided a large benefit, then the transmission rate among 5-year-olds would be far higher than the rate among 6-year-olds. The results don't show that. Instead, they show that transmission rates, which were low among the youngest kids, steadily increased with age—rather than dropping sharply for older children subject to the face-covering requirement. This suggests that masking kids in school does not provide a major benefit and might provide none at all. And yet many officials prefer to double down on masking mandates, as if the fundamental policy were sound and only the people have failed."

84) Masks In Schools: Scientific American Fumbles Report On Childhood COVID Transmission, English/ACSH, 2021	“Masking is a low-risk, inexpensive intervention. If we want to recommend it as a precautionary measure, especially in situations where vaccination isn’t an option, great. But that’s not what the public has been told. “Florida governor Ron DeSantis and politicians in Texas say research does not support mask mandates,” SciAm’s sub-headline bellowed. “Many studies show they are wrong.”If that’s the case, demonstrate that the intervention works before you mandate its use in schools. If you can’t, acknowledged what UC San Francisco hematologist-oncologist and Associate Professor of Epidemiology Vinay Prasad wrote over at the Atlantic:”No scientific consensus exists about the wisdom of mandatory-masking rules for schoolchildren … In mid-March 2020, few could argue against erring on the side of caution. But nearly 18 months later, we owe it to children and their parents to answer the question properly: Do the benefits of masking kids in school outweigh the downsides? The honest answer in 2021 remains that we don’t know for sure.”
85) Masks ‘don’t work,’ are damaging health and are being used to control population: Doctors panel, Haynes, 2021	“The only randomized control studies that have ever been done on masks show that they don’t work,” began Dr. Nepute. He referred to Dr. Anthony Fauci’s “noble lie,” in which Fauci “changed his tune,” from his March 2020 comments, where he downplayed the need and efficacy of mask wearing, before urging Americans to use masks later in the year. “Well, he lied to us. So if he lied about that, what else has he lied to you about?” questioned Nepute.Masks have become commonplace in almost every setting, whether indoors or outdoors, but Dr. Popper mentioned how there have been “no studies” which actually examine the “effect of wearing a mask during all your waking hours.”“There’s no science to back any of this and particularly no science to back the fact that wearing a mask twenty four-seven or every waking minute, is health promoting,” added Popper.”
86) Aerosol penetration through surgical masks, Chen, 1992	“The mask that has the highest collection efficiency is not necessarily the best mask from the perspective of the filter-quality factor, which considers not only the capture efficiency but also the air resistance. Although surgical mask media may be adequate to remove bacteria exhaled or expelled by health care workers, they may not be sufficient to remove the sub-micrometer-sized aerosols containing pathogens to which these health care workers are potentially exposed.”
87) CDC: Schools With Mask Mandates Didn’t See Statistically Significant Different Rates of COVID Transmission From Schools With Optional Policies, Miltimore, 2021	“The CDC did not include its finding that “required mask use among students was not statistically significant compared with schools where mask use was optional” in the summary of its report.”

88) Horowitz: Data from India continues to blow up the 'Delta' fear narrative, Howorwitz, 2021	"Rather than proving the need to sow more panic, fear, and control over people, the story from India — the source of the "Delta" variant — continues to refute every current premise of COVID fascism…Unless we do that, we must return to the very effective lockdowns and masks. In reality, India's experience proves the opposite true; namely:1) Delta is largely an attenuated version, with a much lower fatality rate, that for most people is akin to a cold.2) Masks failed to stop the spread there.3) The country has come close to the herd immunity threshold with just 3% vaccinated.
89) Transmission of SARS-CoV-2 Delta Variant Among Vaccinated Healthcare Workers, Vietnam, Chau, 2021	While not definitive in the LANCET publication, it can be inferred that the nurses were all masked up and had PPE etc. as was the case in Finland and Israel nosocomial outbreaks, indicating the failure of PPE and masks to constrain Delta spread.
90) Aerosol penetration through surgical masks, Willeke, 1992	"The mask that has the highest collection efficiency is not necessarily the best mask from the perspective of the filter-quality factor, which considers not only the capture efficiency but also the air resistance. Although surgical mask media may be adequate to remove bacteria exhaled or expelled by health care workers, they may not be sufficient to remove the submicrometer-size aerosols containing pathogens to which these health care workers are potentially exposed."
91) The efficacy of standard surgical face masks: an investigation using "tracer particles", Wiley, 1980	"Particle contamination of the wound was demonstrated in all aexperiments. Since the microspheres were not identified on the exterior of these face masks, they must have escped around the mask edges and found their way into the wound. The wearing of the mask beneath the headgear curtails this route of contamination."
92) An Evidence Based Scientific Analysis of Why Masks are Ineffective, Unnecessary, and Harmful, Meehan, 2020	"Decades of the highest-level scientific evidence (meta-analyses of multiple randomized controlled trials) overwhelmingly conclude that medical masks are ineffective at preventing the transmission of respiratory viruses, including SAR-CoV-2…those arguing for masks are relying on low-level evidence (observational retrospective trials and mechanistic theories), none of which are powered to counter the evidence, arguments, and risks of mask mandates."
93) Open Letter from Medical Doctors and Health Professionals to All Belgian Authorities and All Belgian Media, AIER, 2020	"Oral masks in healthy individuals are ineffective against the spread of viral infections."
94) Effectiveness of N95 respirators versus surgical masks against influenza: A systematic review and meta-analysis, Long, 2020	"The use of N95 respirators compared with surgical masks is not associated with a lower risk of laboratory-confirmed influenza. It suggests that N95 respirators should not be recommended for general public and nonhigh-risk medical staff those are not in close contact with influenza patients or suspected patients."

95) Advice on the use of masks in the context of COVID-19, WHO, 2020	“However, the use of a mask alone is insufficient to provide an adequate level of protection or source control, and other personal and community level measures should also be adopted to suppress transmission of respiratory viruses.”
96) Farce mask: it’s safe for only 20 minutes, The Sydney Morning Herald, 2003	“Health authorities have warned that surgical masks may not be an effective protection against the virus.”Those masks are only effective so long as they are dry,” said Professor Yvonne Cossart of the Department of Infectious Diseases at the University of Sydney.”As soon as they become saturated with the moisture in your breath they stop doing their job and pass on the droplets.”Professor Cossart said that could take as little as 15 or 20 minutes, after which the mask would need to be changed. But those warnings haven’t stopped people snapping up the masks, with retailers reporting they are having trouble keeping up with demand.”
97) Study: Wearing A Used Mask Is Potentially Riskier Than No Mask At All, Boyd, 2020 Effects of mask-wearing on the inhalability and deposition of airborne SARS-CoV-2 aerosols in human upper airway	“According to researchers from the University of Massachusetts Lowell and California Baptist University, a three-layer surgical mask is 65 percent efficient in filtering particles in the air. That effectiveness, however, falls to 25 percent once it is used.“It is natural to think that wearing a mask, no matter new or old, should always be better than nothing,” said author Jinxiang Xi.“Our results show that this belief is only true for particles larger than 5 micrometers, but not for fine particles smaller than 2.5 micrometers,” he continued.”
MASK MANDATES	
1) Mask mandate and use efficacy for COVID-19 containment in US States, Guerra, 2021	“Calculated total COVID-19 case growth and mask use for the continental United States with data from the Centers for Disease Control and Prevention and Institute for Health Metrics and Evaluation. We estimated post-mask mandate case growth in non-mandate states using median issuance dates of neighboring states with mandates…did not observe association between mask mandates or use and reduced COVID-19 spread in US states.”
2) These 12 Graphs Show Mask Mandates Do Nothing To Stop COVID, Weiss, 2020	“Masks can work well when they’re fully sealed, properly fitted, changed often, and have a filter designed for virus-sized particles. This represents none of the common masks available on the consumer market, making universal masking much more of a confidence trick than a medical solution…Our universal use of unscientific face coverings is therefore closer to medieval superstition than it is to science, but many powerful institutions have too much political capital invested in the mask narrative at this point, so the dogma is perpetuated. The narrative says that if cases go down it’s because masks succeeded. It says that if cases go up it’s because masks succeeded in preventing more cases. The narrative simply assumes rather than proves that masks work, despite overwhelming scientific evidence to the contrary.”

3) Mask Mandates Seem to Make CCP Virus Infection Rates Climb, Study Says, Vadum, 2020	"Protective-mask mandates aimed at combating the spread of the CCP virus that causes the disease COVID-19 appear to promote its spread, according to a report from RationalGround.com, a clearinghouse of COVID-19 data trends that's run by a grassroots group of data analysts, computer scientists, and actuaries."
4) Horowitz: Comprehensive analysis of 50 states shows greater spread with mask mandates, Howorwitz, 2020 Justin Hart	"How long do our politicians get to ignore the results?… The results: When comparing states with mandates vs. those without, or periods of times within a state with a mandate vs. without, there is absolutely no evidence the mask mandate worked to slow the spread one iota. In total, in the states that had a mandate in effect, there were 9,605,256 confirmed COVID cases over 5,907 total days, an average of 27 cases per 100,000 per day. When states did not have a statewide order (which includes the states that never had them and the period of time masking states did not have the mandate in place) there were 5,781,716 cases over 5,772 total days, averaging 17 cases per 100,000 people per day."
5) The CDC's Mask Mandate Study: Debunked, Alexander, 2021	"Thus, it is not surprising that the CDC's own recent conclusion on the use of nonpharmaceutical measures such as face masks in pandemic influenza, warned that scientific "evidence from 14 randomized controlled trials of these measures did not support a substantial effect on transmission…" Moreover, in the WHO's 2019 guidance document on nonpharmaceutical public health measures in a pandemic, they reported as to face masks that "there is no evidence that this is effective in reducing transmission…" Similarly, in the fine print to a recent double-blind, double-masking simulation the CDC stated that "The findings of these simulations [supporting mask usage] should neither be generalized to the effectiveness …nor interpreted as being representative of the effectiveness of these masks when worn in real-world settings."
6) Phil Kerpin, tweet, 2021 The Spectator	"The first ecological study of state mask mandates and use to include winter data: "Case growth was independent of mandates at low and high rates of community spread, and mask use did not predict case growth during the Summer or Fall-Winter waves."
7) How face masks and lockdowns failed, SPR, 2021	"Infections have been driven primarily by seasonal and endemic factors, whereas mask mandates and lockdowns have had no discernible impact"
8) Analysis of the Effects of COVID-19 Mask Mandates on Hospital Resource Consumption and Mortality at the County Level, Schauer, 2021	"There was no reduction in per-population daily mortality, hospital bed, ICU bed, or ventilator occupancy of COVID-19-positive patients attributable to the implementation of a mask-wearing mandate."

9) Do we need mask mandates, Harris, 2021	"But masks proved far less useful in the subsequent 1918 Spanish flu, a viral disease spread by pathogens smaller than bacteria. California's Department of Health, for instance, reported that the cities of Stockton, which required masks, and Boston, which did not, had scarcely different death rates, and so advised against mask mandates except for a few high-risk professions such as barbers….Randomized controlled trials (RCTs) on mask use, generally more reliable than observational studies, though not infallible, typically show that cloth and surgical masks offer little protection. A few RCTs suggest that perfect adherence to an exacting mask protocol may guard against influenza, but meta-analyses find little on the whole to suggest that masks offer meaningful protection. WHO guidelines from 2019 on influenza say that despite "mechanistic plausibility for the potential effectiveness" of masks, studies showed a benefit too small to be established with any certainty. Another literature review by researchers from the University of Hong Kong agrees. Its best estimate for the protective effect of surgical masks against influenza, based on ten RCTs published through 2018, was just 22 percent, and it could not rule out zero effect."
MASK HARMS	
1) Corona children studies: Co-Ki: First results of a German-wide registry on mouth and nose covering (mask) in children, Schwarz, 2021	"The average wearing time of the mask was 270 minutes per day. Impairments caused by wearing the mask were reported by 68% of the parents. These included irritability (60%), headache (53%), difficulty concentrating (50%), less happiness (49%), reluctance to go to school/kindergarten (44%), malaise (42%) impaired learning (38%) and drowsiness or fatigue (37%)."
2) Dangerous pathogens found on children's face masks, Cabrera, 2021	"Masks were contaminated with bacteria, parasites, and fungi, including three with dangerous pathogenic and pneumonia-causing bacteria."
3) Masks, false safety and real dangers, Part 2: Microbial challenges from masks, Borovoy, 2020/2021	"Laboratory testing of used masks from 20 train commuters revealed that 11 of the 20 masks tested contained over 100,000 bacterial colonies. Molds and yeasts were also found. Three of the masks contained more than one million bacterial colonies… The outside surfaces of surgical masks were found to have high levels of the following microbes, even in hospitals, more concentrated on the outside of masks than in the environment. Staphylococcus species (57%) and Pseudomonas spp (38%) were predominant among bacteria, and Penicillium spp (39%) and Aspergillus spp. (31%) were the predominant fungi."

4) Preliminary report on surgical mask induced deoxygenation during major surgery, Beder, 2008	"Considering our findings, pulse rates of the surgeon's increase and SpO2 decrease after the first hour. This early change in SpO2 may be either due to the facial mask or the operational stress. Since a very small decrease in saturation at this level, reflects a large decrease in PaO2, our findings may have a clinical value for the health workers and the surgeons."
5) Mask mandates may affect a child's emotional, intellectual development, Gillis, 2020	"The thing is we really don't know for sure what the effect may or may not be. But what we do know is that children, especially in early childhood, they use the mouth as part of the entire face to get a sense of what's going on around them in terms of adults and other people in their environment as far as their emotions. It also has a role in language development as well… If you think about an infant, when you interact with them you use part of your mouth. They are interested in your facial expressions. And if you think about that part of the face being covered up, there is that possibility that it could have an effect. But we don't know because this is really an unprecedented time. What we wonder about is if this could play a role and how can we stop it if it would affect child development."
6) Headaches and the N95 face-mask amongst healthcare providers, Lim, 2006	"Healthcare providers may develop headaches following the use of the N95 face-mask."
7) Maximizing Fit for Cloth and Medical Procedure Masks to Improve Performance and Reduce SARS-CoV-2 Transmission and Exposure, 2021, Brooks, 2021	"Although use of double masking or knotting and tucking are two of many options that can optimize fit and enhance mask performance for source control and for wearer protection, double masking might impede breathing or obstruct peripheral vision for some wearers, and knotting and tucking can change the shape of the mask such that it no longer covers fully both the nose and the mouth of persons with larger faces."
8) Facemasks in the COVID-19 era: A health hypothesis, Vainshelboim, 2021	"Wearing facemasks has been demonstrated to have substantial adverse physiological and psychological effects. These include hypoxia, hypercapnia, shortness of breath, increased acidity and toxicity, activation of fear and stress response, rise in stress hormones, immunosuppression, fatigue, headaches, decline in cognitive performance, predisposition for viral and infectious illnesses, chronic stress, anxiety and depression."
9) Wearing a mask can expose children to dangerous levels of carbon dioxide in just THREE MINUTES, study finds, Shaheen/Daily Mail, 2021	"European study found that children wearing masks for only minutes could be exposed to dangerous carbon dioxide levels…Forty-five children were exposed to carbon dioxide levels between three to twelve times healthy levels."
10) How many children must die? Shilhavy, 2020	"How long are parents going to continue masking their children causing great harm to them, even to the point of risking their lives? Dr. Eric Nepute in St. Louis took time to record a video rant that he wants everyone to share, after the 4-year-old child of one of his patients almost died from a bacterial lung infection caused by prolonged mask use."

11) Medical Doctor Warns that "Bacterial Pneumonias Are on the Rise" from Mask Wearing, Meehan, 2021	"I'm seeing patients that have facial rashes, fungal infections, bacterial infections. Reports coming from my colleagues, all over the world, are suggesting that the bacterial pneumonias are on the rise…Why might that be? Because untrained members of the public are wearing medical masks, repeatedly… in a non-sterile fashion… They're becoming contaminated. They're pulling them off of their car seat, off the rear-view mirror, out of their pocket, from their countertop, and they're reapplying a mask that should be worn fresh and sterile every single time."
12) Open Letter from Medical Doctors and Health Professionals to All Belgian Authorities and All Belgian Media, AIER, 2020	"Wearing a mask is not without side effects. Oxygen deficiency (headache, nausea, fatigue, loss of concentration) occurs fairly quickly, an effect similar to altitude sickness. Every day we now see patients complaining of headaches, sinus problems, respiratory problems and hyperventilation due to wearing masks. In addition, the accumulated CO2 leads to a toxic acidification of the organism which affects our immunity. Some experts even warn of an increased transmission of the virus in case of inappropriate use of the mask."
13) Face coverings for covid-19: from medical intervention to social practice, Peters, 2020	"At present, there is no direct evidence (from studies on Covid19 and in healthy people in the community) on the effectiveness of universal masking of healthy people in the community to prevent infection with respiratory viruses, including Covid19. Contamination of the upper respiratory tract by viruses and bacteria on the outside of medical face masks has been detected in several hospitals. Another research shows that a moist mask is a breeding ground for (antibiotic resistant) bacteria and fungi, which can undermine mucosal viral immunity. This research advocates the use of medical / surgical masks (instead of homemade cotton masks) that are used once and replaced after a few hours."
14) Face masks for the public during the covid-19 crisis, Lazzarino, 2020	"The two potential side effects that have already been acknowledged are: (1) Wearing a face mask may give a false sense of security and make people adopt a reduction in compliance with other infection control measures, including social distancing and hands washing. (2) Inappropriate use of face mask: people must not touch their masks, must change their single-use masks frequently or wash them regularly, dispose them correctly and adopt other management measures, otherwise their risks and those of others may increase. Other potential side effects that we must consider are: (3) The quality and the volume of speech between two people wearing masks is considerably compromised and they may unconsciously come closer. While one may be trained to counteract side effect n.1, this side effect may be more difficult to tackle. (4) Wearing a face mask makes the exhaled air go into the eyes. This generates an uncomfortable feeling and an impulse to touch your eyes. If your hands are contaminated, you are infecting yourself."

15) Contamination by respiratory viruses on outer surface of medical masks used by hospital healthcare workers, Chughtai, 2019	“Respiratory pathogens on the outer surface of the used medical masks may result in self-contamination. The risk is higher with longer duration of mask use (> 6 h) and with higher rates of clinical contact. Protocols on duration of mask use should specify a maximum time of continuous use, and should consider guidance in high contact settings.”
16) Reusability of Facemasks During an Influenza Pandemic, Bailar, 2006	“After considering all the testimony and other information we received, the committee concluded that there is currently no simple, reliable way to decontaminate these devices and enable people to use them safely more than once. There is relatively little data available about how effective these devices are against flu even the first time they are used. To the extent they can help at all, they must be used correctly, and the best respirator or mask will do little to protect a person who uses it incorrectly. Substantial research must be done to increase our understanding of how flu spreads, to develop better masks and respirators, and to make it easier to decontaminate them. Finally, the use of face coverings is only one of many strategies that will be needed to slow or halt a pandemic, and people should not engage in activities that would increase their risk of exposure to flu just because they have a mask or respirator.”
17) Exhalation of respiratory viruses by breathing, coughing, and talking, Stelzer-Braid, 2009	“The exhaled aerosols generated by coughing, talking, and breathing were sampled in 50 subjects using a novel mask, and analyzed using PCR for nine respiratory viruses. The exhaled samples from a subset of 10 subjects who were PCR positive for rhinovirus were also examined by cell culture for this virus. Of the 50 subjects, among the 33 with symptoms of upper respiratory tract infections, 21 had at least one virus detected by PCR, while amongst the 17 asymptomatic subjects, 4 had a virus detected by PCR. Overall, rhinovirus was detected in 19 subjects, influenza in 4 subjects, parainfluenza in 2 subjects, and human metapneumovirus in 1 subject. Two subjects were co-infected. Of the 25 subjects who had virus-positive nasal mucus, the same virus type was detected in 12 breathing samples, 8 talking samples, and in 2 coughing samples. In the subset of exhaled samples from 10 subjects examined by culture, infective rhinovirus was detected in 2.”
18) [Effect of a surgical mask on six minute walking distance], Person, 2018	“Wearing a surgical mask modifies significantly and clinically dyspnea without influencing walked distance.”

19) Protective masks reduce resilience, Science ORF, 2020	“The German researchers used two types of face masks for their study – surgical masks and so-called FFP2 masks, which are mainly used by medical personnel. The measurements were carried out with the help of spiroergometry, in which patients or in this case the test persons exert themselves physically on a stationary bicycle – a so-called ergometer – or a treadmill. The subjects were examined without a mask, with surgical masks and with FFP2 masks. The masks therefore impair breathing, especially the volume and the highest possible speed of the air when exhaling. The maximum possible force on the ergometer was significantly reduced.”
20) Wearing masks even more unhealthy than expected, Coronoa transition, 2020	“They contain microplastics – and they exacerbate the waste problem…”Many of them are made of polyester and so you have a microplastic problem.” Many of the face masks would contain polyester with chlorine compounds: “If I have the mask in front of my face, then of course I breathe in the microplastic directly and these substances are much more toxic than if you swallow them, as they get directly into the nervous system,” Braungart continues.”
21) Masking Children: Tragic, Unscientific, and Damaging, Alexander, 2021	“Children do not readily acquire SARS-CoV-2 (very low risk), spread it to other children or teachers, or endanger parents or others at home. This is the settled science. In the rare cases where a child contracts Covid virus it is very unusual for the child to get severely ill or die. Masking can do positive harm to children – as it can to some adults. But the cost benefit analysis is entirely different for adults and children – particularly younger children. Whatever arguments there may be for consenting adults – children should not be required to wear masks to prevent the spread of Covid-19. Of course, zero risk is not attainable – with or without masks, vaccines, therapeutics, distancing or anything else medicine may develop or government agencies may impose.”
22) The Dangers of Masks, Alexander, 2021	“With that clarion call, we pivot and refer here to another looming concern and this is the potential danger of the chlorine, polyester, and microplastic components of the face masks (surgical principally but any of the mass-produced masks) that have become part of our daily lives due to the Covid-19 pandemic. We hope those with persuasive power in the government will listen to this plea. We hope that the necessary decisions will be made to reduce the risk to our populations.”

23) 13-year-old mask wearer dies for inexplicable reasons, Corona Transition, 2020	"The case is not only causing speculation in Germany about possible poisoning with carbon dioxide. Because the student "was wearing a corona protective mask when she suddenly collapsed and died a little later in the hospital," writes Wochenblick.Editor's Review: The fact that no cause of death was communicated nearly three weeks after the girl's death is indeed unusual. The carbon dioxide content of the air is usually about 0.04 percent. From a proportion of four percent, the first symptoms of hypercapnia, i.e. carbon dioxide poisoning, appear. If the proportion of the gas rises to more than 20 percent, there is a risk of deadly carbon dioxide poisoning. However, this does not come without alarm signals from the body. According to the medical portal netdoktor, these include "sweating, accelerated breathing, accelerated heartbeat, headaches, confusion, loss of consciousness". The unconsciousness of the girl could therefore be an indication of such poisoning."
24) Student Deaths Lead Chinese Schools to Change Mask Rules, that's, 2020	"During the month of April, three cases of students suffering sudden cardiac death (SCD) while running during gym class have been reported in Zhejiang, Henan and Hunan provinces. Beijing Evening News noted that all three students were wearing masks at the time of their deaths, igniting a critical discussion over school rules on when students should wear masks."
25) Blaylock: Face Masks Pose Serious Risks To The Healthy, 2020	"As for the scientific support for the use of face mask, a recent careful examination of the literature, in which 17 of the best studies were analyzed, concluded that, " None of the studies established a conclusive relationship between mask/respirator use and protection against influenza infection."[1] Keep in mind, no studies have been done to demonstrate that either a cloth mask or the N95 mask has any effect on transmission of the COVID-19 virus. Any recommendations, therefore, have to be based on studies of influenza virus transmission. And, as you have seen, there is no conclusive evidence of their efficiency in controlling flu virus transmission."
26) The mask requirement is responsible for severe psychological damage and the weakening of the immune system, Coronoa Transition, 2020	"In fact, the mask has the potential to "trigger strong psychovegetative stress reactions via emerging aggression, which correlate significantly with the degree of stressful after-effects". Prousa is not alone in her opinion. Several psychologists dealt with the mask problem — and most came to devastating results. Ignoring them would be fatal, according to Prousa."
27) The physiological impact of wearing an N95 mask during hemodialysis as a precaution against SARS in patients with end-stage renal disease, Kao, 2004	"Wearing an N95 mask for 4 hours during HD significantly reduced PaO2 and increased respiratory adverse effects in ESRD patients."

28) Is a Mask That Covers the Mouth and Nose Free from Undesirable Side Effects in Everyday Use and Free of Potential Hazards?, Kisielinski, 2021	"We objectified evaluation evidenced changes in respiratory physiology of mask wearers with significant correlation of O_2 drop and fatigue ($p < 0.05$), a clustered co-occurrence of respiratory impairment and O_2 drop (67%), N95 mask and CO_2 rise (82%), N95 mask and O_2 drop (72%), N95 mask and headache (60%), respiratory impairment and temperature rise (88%), but also temperature rise and moisture (100%) under the masks. Extended mask-wearing by the general population could lead to relevant effects and consequences in many medical fields.""Here are the pathophysiological changes and subjective complaints: 1) Increase in blood carbon dioxide 2) Increase in breathing resistance 3) Decrease in blood oxygen saturation 4) Increase in heart rate 5) Decrease in cardiopulmonary capacity 6) Feeling of exhaustion 7) Increase in respiratory rate 8) Difficulty breathing and shortness of breath 9) Headache 10) Dizziness 11) Feeling of dampness and heat 12) Drowsiness (qualitative neurological deficits) 13) Decrease in empathy perception 14) Impaired skin barrier function with acne, itching and skin lesions"
29) Is N95 face mask linked to dizziness and headache?, Ipek, 2021	"Respiratory alkalosis and hypocarbia were detected after the use of N95. Acute respiratory alkalosis can cause headache, anxiety, tremor, muscle cramps. In this study, it was quantitatively shown that the participants' symptoms were due to respiratory alkalosis and hypocarbia."
30) COVID-19 prompts a team of engineers to rethink the humble face mask, Myers, 2020	"But in filtering those particles, the mask also makes it harder to breathe. N95 masks are estimated to reduce oxygen intake by anywhere from 5 to 20 percent. That's significant, even for a healthy person. It can cause dizziness and lightheadedness. If you wear a mask long enough, it can damage the lungs. For a patient in respiratory distress, it can even be life threatening."
31) 70 doctors in open letter to Ben Weyts: 'Abolish mandatory mouth mask at school' – Belgium, World Today News, 2020	"In an open letter to the Flemish Minister of Education Ben Weyts (N-VA), 70 doctors ask to abolish the mandatory mouth mask at school, both for the teachers and for the students. Weyts does not intend to change course. The doctors ask that Minister Ben Weyts immediately reverses his working method: no mouth mask obligation at school, only protect the risk group and only the advice that people with a possible risk profile should consult their doctor."

32) Face masks pose dangers for babies, toddlers during COVID-19 pandemic, UC Davis Health, 2020	"Masks may present a choking hazard for young children. Also, depending on the mask and the fit, the child may have trouble breathing. If this happens, they need to be able to take it off," said UC Davis pediatrician Lena van der List. "Children less than 2 years of age will not reliably be able to remove a face mask and could suffocate. Therefore, masks should not routinely be used for young children…"The younger the child, the more likely they will be to not wear the mask properly, reach under the mask and touch potentially contaminated masks," said Dean Blumberg, chief of pediatric infectious diseases at UC Davis Children's Hospital. "Of course, this depends on the developmental level of the individual child. But I think masks are not likely to provide much potential benefit over risk until the teen years."
33) Covid-19: Important potential side effects of wearing face masks that we should bear in mind, Lazzarino, 2020	"Other potential side effects that we must consider, however, are 1) The quality and volume of speech between people wearing masks is considerably compromised and they may unconsciously come closer2) Wearing a mask makes the exhaled air go into the eyes. This generates an impulse to touch the eyes. 3) If your hands are contaminated, you are infecting yourself, 4) Face masks make breathing more difficult. Moreover, a fraction of carbon dioxide previously exhaled is inhaled at each respiratory cycle. Those phenomena increase breathing frequency and deepness, and they may worsen the burden of covid-19 if infected people wearing masks spread more contaminated air. This may also worsen the clinical condition of infected people if the enhanced breathing pushes the viral load down into their lungs, 5) The innate immunity's efficacy is highly dependent on the viral load. If masks determine a humid habitat where SARS-CoV-2 can remain active because of the water vapour continuously provided by breathing and captured by the mask fabric, they determine an increase in viral load (by re-inhaling exhaled viruses) and therefore they can cause a defeat of the innate immunity and an increase in infections."
34) Risks of N95 Face Mask Use in Subjects With COPD, Kyung, 2020	"Of the 97 subjects, 7 with COPD did not wear the N95 for the entire test duration. This mask-failure group showed higher British modified Medical Research Council dyspnea scale scores and lower FEV_1 percent of predicted values than did the successful mask use group. A modified Medical Research Council dyspnea scale score ≥ 3 (odds ratio 167, 95% CI 8.4 to >999.9; P = .008) or a FEV_1 < 30% predicted (odds ratio 163, 95% CI 7.4 to >999.9; P = .001) was associated with a risk of failure to wear the N95. Breathing frequency, blood oxygen saturation, and exhaled carbon dioxide levels also showed significant differences before and after N95 use."

35) Masks too dangerous for children under 2, medical group warns, The Japan Times, 2020	"Children under the age of 2 shouldn't wear masks because they can make breathing difficult and increase the risk of choking, a medical group has said, launching an urgent appeal to parents as the nation reopens from the coronavirus crisis…Masks can make breathing difficult because infants have narrow air passages," which increases the burden on their hearts, the association said, adding that masks also raise the risk of heat stroke for them."
36) Face masks can be problematic, dangerous to health of some Canadians: advocates, Spenser, 2020	"Face masks are dangerous to the health of some Canadians and problematic for some others…Asthma Canada president and CEO Vanessa Foran said simply wearing a mask could create risk of an asthma attack."
37) COVID-19 Masks Are a Crime Against Humanity and Child Abuse, Griesz-Brisson, 2020	"The rebreathing of our exhaled air will without a doubt create oxygen deficiency and a flooding of carbon dioxide. We know that the human brain is very sensitive to oxygen depravation. There are nerve cells for example in the hippocampus, that can't be longer than 3 minutes without oxygen – they cannot survive. The acute warning symptoms are headaches, drowsiness, dizziness, issues in concentration, slowing down of the reaction time – reactions of the cognitive system. However, when you have chronic oxygen depravation, all of those symptoms disappear, because you get used to it. But your efficiency will remain impaired and the undersupply of oxygen in your brain continues to progress. We know that neurodegenerative diseases take years to decades to develop. If today you forget your phone number, the breakdown in your brain would have already started 20 or 30 years ago…The child needs the brain to learn, and the brain needs oxygen to function. We don't need a clinical study for that. This is simple, indisputable physiology. Conscious and purposely induced oxygen deficiency is an absolutely deliberate health hazard, and an absolute medical contraindication."
38) Study shows how masks are harming children, Mercola, 2021	"Data from the first registry to record children's experiences with masks show physical, psychological and behavioral issues including irritability, difficulty concentrating and impaired learning.Since school shutdowns in spring 2020, an increasing number of parents are seeking drug treatment for attention deficit hyperactivity disorder (ADHD) for their children.Evidence from the U.K. shows schools are not the super spreaders health officials said they were; measured rates of infection in schools were the same as the community, not higher.A large randomized controlled trial showed wearing masks does not reduce the spread of SARS-CoV-2."

39) New Study Finds Masks Hurt Schoolchildren Physically, Psychologically, and Behaviorally, Hall, 2021 https://www.researchsquare.com/article/rs-124394/v2	"A new study, involving over 25,000 school-aged children, shows that masks are harming schoolchildren physically, psychologically, and behaviorally, revealing 24 distinct health issues associated with wearing masks…Though these results are concerning, the study also found that 29.7% of children experienced shortness of breath, 26.4% experienced dizziness, and hundreds of the participants experiencing accelerated respiration, tightness in chest, weakness, and short-term impairment of consciousness."
40) Protective Face Masks: Effect on the Oxygenation and Heart Rate Status of Oral Surgeons during Surgery, Scarano, 2021	"In all 20 surgeons wearing FFP2 covered by surgical masks, a reduction in arterial O_2 saturation from around 97.5% before surgery to 94% after surgery was recorded with increase of heart rates. A shortness of breath and light-headedness/headaches were also noted."
41) Effects of surgical and FFP2/N95 face masks on cardiopulmonary exercise capacity, Fikenzer, 2020	"Ventilation, cardiopulmonary exercise capacity and comfort are reduced by surgical masks and highly impaired by FFP2/N95 face masks in healthy individuals. These data are important for recommendations on wearing face masks at work or during physical exercise."
42) Headaches Associated With Personal Protective Equipment – A Cross-Sectional Study Among Frontline Healthcare Workers During COVID-19, Ong, 2020	"Most healthcare workers develop de novo PPE-associated headaches or exacerbation of their pre-existing headache disorders."
43) Open letter from medical doctors and health professionals to all Belgian authorities and all Belgian media, The American Institute of Stress, 2020	"Wearing a mask is not without side effects. Oxygen deficiency (headache, nausea, fatigue, loss of concentration) occurs fairly quickly, an effect similar to altitude sickness. Every day we now see patients complaining of headaches, sinus problems, respiratory problems, and hyperventilation due to wearing masks. In addition, the accumulated CO2 leads to a toxic acidification of the organism which affects our immunity. Some experts even warn of increased transmission of the virus in case of inappropriate use of the mask."
44) Reusing masks may increase your risk of coronavirus infection, expert says, Laguipo, 2020	"For the public, they should not wear facemasks unless they are sick, and if a healthcare worker advised them."For the average member of the public walking down a street, it is not a good idea," Dr. Harries said."What tends to happen is people will have one mask. They won't wear it all the time, they will take it off when they get home, they will put it down on a surface they haven't cleaned," she added.Further, she added that behavioral issues could adversely put themselves at more risk of getting the infection. For instance, people go out and don't wash their hands, they touch parts of the mask or their face, and they get infected."
45) What's Going On Under the Masks?, Wright, 2021	"Americans today have pretty good chompers on average, at least relative to most other people, past and present. Nevertheless, we do not think enough about oral health as evidenced by the almost complete lack of discussion regarding the effect of lockdowns and mandatory masking on our mouths."

46) Experimental Assessment of Carbon Dioxide Content in Inhaled Air With or Without Face Masks in Healthy ChildrenA Randomized Clinical Trial, Walach, 2021	"A large-scale surveyin Germany of adverse effects in parents and children using data of 25 930 children has shown that 68% of the participating children had problems when wearing nose and mouth coverings."
47) NM Kids forced to wear masks while running in 100-degree heat; Parents are striking back, Smith, 2021	"Nationally, children have a 99.997% survival rate from COVID-19. In New Mexico, only 0.7% of child COVID-19 cases have resulted in hospitalization. It is clear that children have an extremely low risk of severe illness or death from COVID-19, and mask mandates are placing a burden upon kids which is detrimental to their own health and well-being."
48) Health Canada issues advisory for disposable masks with graphene, CBC, 2021	"Health Canada is advising Canadians not to use disposable face masks that contain graphene. Health Canada issued the notice on Friday and said wearers could inhale graphene, a single layer of carbon atoms. Masks containing the toxic particles may have been distributed in some health-care facilities."
49) COVID-19: Performance study of microplastic inhalation risk posed by wearing masks, Li, 2021 Is graphene safe?	"Wearing masks considerably reduces the inhalation risk of particles (e.g., granular microplastics and unknown particles) even when they are worn continuously for 720 h. Surgical, cotton, fashion, and activated carbon masks wearing pose higher fiber-like microplastic inhalation risk, while all masks generally reduced exposure when used under their supposed time (<4 h). N95 poses less fiber-like microplastic inhalation risk. Reusing masks after they underwent different disinfection pre-treatment processes can increase the risk of particle (e.g., granular microplastics) and fiber-like microplastic inhalation. Ultraviolet disinfection exerts a relatively weak effect on fiber-like microplastic inhalation, and thus, it can be recommended as a treatment process for reusing masks if proven effective from microbiological standpoint. Wearing an N95 mask reduces the inhalation risk of spherical-type microplastics by 25.5 times compared with not wearing a mask."
50) Manufacturers have been using nanotechnology-derived graphene in face masks — now there are safety concerns, Maynard, 2021	"Early concerns around graphene were sparked by previous research on another form of carbon — carbon nanotubes. It turns out that some forms of these fiber-like materials can cause serious harm if inhaled. And following on from research here, a natural next-question to ask is whether carbon nanotubes' close cousin graphene comes with similar concerns.Because graphene lacks many of the physical and chemical aspects of carbon nanotubes that make them harmful (such as being long, thin, and hard for the body to get rid of), the indications are that the material is safer than its nanotube cousins. But safer doesn't mean safe. And current research indicates that this is not a material that should be used where it could potentially be inhaled, without a good amount of safety testing first…As a general rule of thumb, engineered nanomaterials should not be used in products where they might inadvertently be inhaled and reach the sensitive lower regions of the lungs."

51) Masking young children in school harms language acquisition, Walsh, 2021	"This is important because children and/or students do not have the speech or language ability that adults have — they are not equally able and the ability to see the face and especially the mouth is critical to language acquisition which children and/or students are engaged in at all times. Furthermore, the ability to see the mouth is not only essential to communication but also essential to brain development."Studies show that by age four, kids from low-income households will hear 30 million less words than their more affluent counterparts, who get more quality face-time with caretakers." (https://news.stanford.edu/news/2014/november/language-toddlers-fernald-110514.html)."
52) Dangerous pathogens found on children's face masks, Rational Ground, 2021	"A group of parents in Gainesville, FL, sent 6 face masks to a lab at the University of Florida, requesting an analysis of contaminants found on the masks after they had been worn. The resulting report found that five masks were contaminated with bacteria, parasites, and fungi, including three with dangerous pathogenic and pneumonia-causing bacteria. Although the test is capable of detecting viruses, including SARS-CoV-2, only one virus was found on one mask (alcelaphine herpesvirus 1)…Half of the masks were contaminated with one or more strains of pneumonia-causing bacteria. One-third were contaminated with one or more strains of meningitis-causing bacteria. One-third were contaminated with dangerous, antibiotic-resistant bacterial pathogens. In addition, less dangerous pathogens were identified, including pathogens that can cause fever, ulcers, acne, yeast infections, strep throat, periodontal disease, Rocky Mountain Spotted Fever, and more."
53) Face mask dermatitis" due to compulsory facial masks during the SARS-CoV-2 pandemic: data from 550 health care and non-health care workers in Germany, Niesert, 2021	"The duration of wearing masks showed a significant impact on the prevalence of symptoms ($p < 0.001$). Type IV hypersensitivity was significantly more likely in participants with symptoms compared to those without symptoms ($p = 0.001$), whereas no increase in symptoms was observed in participants with atopic diathesis. HCWs used facial skin care products significantly more often than non-HCWs ($p = 0.001$)."
54) Effect of Wearing Face Masks on the Carbon Dioxide Concentration in the Breathing Zone, AAQR/Geiss, 2020	"Detected carbon dioxide concentrations ranged from 2150 ± 192 to 2875 ± 323 ppm. The concentrations of carbon dioxide while not wearing a face mask varied from 500–900 ppm. Doing office work and standing still on the treadmill each resulted in carbon dioxide concentrations of around 2200 ppm. A small increase could be observed when walking at a speed of 3 km h–1 (leisurely walking pace)…concentrations in the detected range can cause undesirable symptoms, such as fatigue, headache, and loss of concentration."

55) Surgical masks as source of bacterial contamination during operative procedures, Zhiqing, 2018	"The source of bacterial contamination in SMs was the body surface of the surgeons rather than the OR environment. Moreover, we recommend that surgeons should change the mask after each operation, especially those beyond 2 hours."
56) The Damage of Masking Children Could be Irreparable, Hussey, 2021	"When we surround children with mask-wearers for a year at a time, are we impairing their face barcode recognition during a period of hot neural development, thus putting full development of the FFA at risk? Does the demand for separation from others, reducing social interaction, add to the potential consequences as it might in autism? When can we be sure that we won't interfere with visual input to the face recognition visual neurology so we don't interfere with brain development? How much time with stimulus interference can we allow without consequences? Those are all questions currently without answers; we don't know. Unfortunately, the science implies that if we mess up brain development for faces, we may not currently have therapies to undo everything we've done."
57) Masks can be Murder, Grossman, 2021	"Wearing masks can create a sense of anonymity for an aggressor, while also dehumanizing the victim. This prevents empathy, empowering violence, and murder." Masking helps remove empathy and compassion, allowing others to commit unspeakable acts on the masked person."
58) London high school teacher calls face masks an 'egregious and unforgivable form of child abuse, Butler, 2020	"In his email, Farquharson called the campaign to legislate mask wearing a "shameful farce, a charade, an act of political theatre" that's more about enforcing "obedience and compliance" than it is about public health. He also likened children wearing masks to "involuntary self-torture," calling it "an egregious and unforgivable form of child abuse and physical assault."
59) UK Government Advisor Admits Masks Are Just "Comfort Blankets" That Do Virtually Nothing, ZeroHedge, 2021	"As the UK Government heralds "freedom day" today, which is anything but, a prominent government scientific advisor has admitted that face masks do very little to protect from coronavirus and are basically just "comfort blankets…the professor noted that "those aerosols escape masks and will render the mask ineffective," adding "The public were demanding something must be done, they got masks, it is just a comfort blanket. But now it is entrenched, and we are entrenching bad behaviour…all around the world you can look at mask mandates and superimpose on infection rates, you cannot see that mask mandates made any effect whatsoever," Axon further noted, adding that "The best thing you can say about any mask is that any positive effect they do have is too small to be measured."

60) Masks, false safety and real dangers, Part 1: Friable mask particulate and lung vulnerability, Borovoy, 2020	“Surgical personnel are trained to never touch any part of a mask, except the loops and the nose bridge. Otherwise, the mask is considered useless and is to be replaced. Surgical personnel are strictly trained not to touch their masks otherwise. However, the general public may be seen touching various parts of their masks. Even the masks just removed from manufacturer packaging have been shown in the above photos to contain particulate and fiber that would not be optimal to inhale… Further concerns of macrophage response and other immune and inflammatory and fibroblast response to such inhaled particles specifically from facemasks should be the subject of more research. If widespread masking continues, then the potential for inhaling mask fibers and environmental and biological debris continues on a daily basis for hundreds of millions of people. This should be alarming for physicians and epidemiologists knowledgeable in occupational hazards.”
61) Medical Masks, Desai, 2020	“Face masks should be used only by individuals who have symptoms of respiratory infection such as coughing, sneezing, or, in some cases, fever. Face masks should also be worn by health care workers, by individuals who are taking care of or are in close contact with people who have respiratory infections, or otherwise as directed by a doctor. Face masks should not be worn by healthy individuals to protect themselves from acquiring respiratory infection because there is no evidence to suggest that face masks worn by healthy individuals are effective in preventing people from becoming ill.”

Author

Paul Elias Alexander

Dr. Paul Alexander is an epidemiologist focusing on clinical epidemiology, evidence-based medicine, and research methodology. He has a master's in epidemiology from University of Toronto, and a master's degree from Oxford University. He earned his PhD from McMaster's Department of Health Research Methods, Evidence, and Impact. He has some background training in Bioterrorism/Biowarfare from John's Hopkins, Baltimore, Maryland. Paul is a former WHO Consultant and Senior Advisor to US Department of HHS in 2020 for the COVID-19 response.

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sorry forget to send

Regards,

Andrew Zywiec, MD

To Search for Truth Above All

The COVID pandemic has been a topic that very few doctors would like to discuss, and for good reason. The handling of COVID, personal protective equipment (PPE) use, mandated vaccines, and systemic response were and remain deeply flawed and lack scientific explanation.

PPE has been utilized at great cost[1] and has had very little impact on the transmission of COVID[2]. It stands to reason that clothe face masks and medical masks alike have not stopped transmission at all, one reason being the porous nature of these materials is unlikely to trap a particle as small as the virus[3]. Inversely, the mask likely serves to trap larger particles, such as bacteria, creating an infectious concern. Masks are removed multiple times a day, placed in pockets or on surfaces, and worn throughout multiple locations. These are only several of the misuse of PPE witnessed by nearly every medical professional, patient, and associated healthcare worker. One would be hard pressed to find anyone who has never carried out any of these actions. This indeed increases the likelihood that the masks become a petri dish of germs, so to speak. Furthermore, masking inhibits the natural inhalation and exhalation of air, thus inhibiting the mucociliary escalator of the respiratory system from doing its job: expelling particles that irritate the respiratory tract[4] and inducing the production of IgA[5], which ultimately enhances the body's natural immunity. The masking of patients with respiratory problems or disabilities certainly worsened those conditions, and the masking of children led to predictable side effects and long-term neurological and psychological issues including, but not limited to:

I. Speech pathology
    i. Masks muffle the voice, the inability to hear correctly leads to language delay[6]
II. Developmental and social delay
    i. Facial recognition and the response to facial features and associated emotions manifested by physical expression are paramount to social development[7]
III. Decreased natural immune response
    i. Children have a robust immune system that requires exposure to common pathogens in everyday life to develop long term immunity[8], masking likely served to decrease exposure to the natural microbiome of their environment

I have, in my possession, text messages between medical personnel speaking about sharing PPE for the purposes of FIT testing. This is obviously an incorrect and dangerous use of PPE. However, these actions occur consistently, which offers a massive inconsistency for us to resolve. Furthermore, when should an individual wear a mask? The guideline is consistently changing[9]. Take into account each scenario; when one sits at the desk, eats a meal, uses the restroom, walks the wards, is closer than 6 feet to another (and by extension should we be concerned it that individual has recently been exposed to COVID, do you currently have COVID, who have they disclosed their status to, and was the disclosure

[1] https://www.mcknights.com/news/analysis-ppe-costs-increase-over-1000-during-covid-19-crisis/
[2] https://reason.com/2022/02/07/that-study-of-face-masks-does-not-show-what-the-cdc-claims/
[3] https://www.aerosol.mech.ubc.ca/what-size-particle-is-important-to-transmission/
[4] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5378048/
[5] https://www.ncbi.nlm.nih.gov/books/NBK551516/
[6] https://www.asha.org/public/hearing/Effects-of-Hearing-Loss-on-Development/
[7] https://www.ncbi.nlm.nih.gov/books/NBK534819/
[8] https://www.aier.org/article/why-is-there-such-reluctance-to-discuss-natural-immunity/
[9] https://www.latimes.com/science/story/2021-07-27/timeline-cdc-mask-guidance-during-covid-19-pandemic

appropriate, how were they tested, was the test carried out correctly, and was the test accurate, and if so how was the accuracy determined?) should one wear a mask, and which mask. One could never possibly assume that all of this information was or could be assessed in real time, and thusly, it remains inappropriate.

Mandated vaccinations were coerced, rather than consented to. If a physician cannot accurately state the risks and benefits, the side effect profile, and research to inform the patient, not to mention and entire vaccine packet, one cannot be informed of the consent they are giving, as the physician is no informing the patient. This is rather forced or coerced consent. Thousands were threatened with the loss of their job or their livelihood, unless of course they complied with a vaccine mandate that was unconstitutional[10], poorly researched, did not go through appropriate clinical trials[11], and was not even well understood enough to present odds ratio, number needed to treat, number needed to harm, or virtually any useful statistical measure. Instead, the most concerning side effects are on Pfizer's web site buried in a section without any statistics at all. New research (and anecdotal evidence of many doctors and patients) proves that molecular mimicry to healthy human tissue[12], increased clotting profiles[13], and even neurological damage[14] has occurred secondary to the COVID19 vaccines. From a scientific standpoint, as a medical doctor, it appears that there is no evidence to support how the COVID pandemic was handled or continues to be handled.

[1] https://www.mcknights.com/news/analysis-ppe-costs-increase-over-1000-during-covid-19-crisis/
[2] https://reason.com/2022/02/07/that-study-of-face-masks-does-not-show-what-the-cdc-claims/
[3] https://www.aerosol.mech.ubc.ca/what-size-particle-is-important-to-transmission/
[4] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5378048/
[5] https://www.ncbi.nlm.nih.gov/books/NBK551516/
[6] https://www.asha.org/public/hearing/Effects-of-Hearing-Loss-on-Development/
[7] https://www.ncbi.nlm.nih.gov/books/NBK534819/
[8] https://www.aier.org/article/why-is-there-such-reluctance-to-discuss-natural-immunity/
9https://www.latimes.com/science/story/2021-07-27/timeline-cdc-mask-guidance-during-covid-19-pandemic

[10]https://www.swfinstitute.org/news/90658/supreme-court-rules-biden-vaccine-mandate-for-businesses-is-unconstitutional
[11] https://www.smartsheet.com/content/clinical-trial-phases
[12] https://pubmed.ncbi.nlm.nih.gov/33610750/
[13] https://pubmed.ncbi.nlm.nih.gov/35582622/
[14] https://www.bmj.com/content/374/bmj.n1786/rr-0

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[10] https://www.swfinstitute.org/news/90658/supreme-court-rules-biden-vaccine-mandate-for-businesses-is-unconstitutional
[11] https://www.smartsheet.com/content/clinical-trial-phases
[12] https://pubmed.ncbi.nlm.nih.gov/33610750/
[13] https://pubmed.ncbi.nlm.nih.gov/35582622/
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Tel: [redacted] Fax: [redacted]

Fax

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Fax: 1-819-953-2476 **Date:** Jul 28, 2022 03:04 PM
Organization: Canadian Intellectual Property Office
Subject: **Counter Statement - ref. no. 2029297**

Attn: Opposition Board
Counter Statement
Reference Number 202927 (0)

DSR Karis Consulting Inc.
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North Battleford, SK S9A0G2
Tel: [redacted] **Fax:** [redacted]

Fax

To: ATTN: Opposition Board **From:** DSR Karis Consulting Inc.

Fax: 1-819-953-2476 **Date:** Jul 28, 2022 03:04 PM

Organization: Canadian Intellectual Property Office

Subject: **Counter Statement - ref. no. 2029297**

Attn: Opposition Board

Counter Statement

Reference Number 202927 (0)

Applicant DSR Karis Consulting Inc.

Opponent Engineers Canada

Counter Statement to Opposition

The Registrar of Trade-marks
Canadian Intelectual Property Office
Opposition Board
Place du Portage
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Gatineau, Quebec, K1A 0C9
Fax: 819-953-2476

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In the Matter of an Opposition by Engineers Canada to application No.2029297 DSR Karis Consulting Inc. provides the following counter statement:

1. The applicant for registration of the above trademark, gives notice that the following are the grounds on which he relies as supporting the application.

(a) The opposition is frivolous and vexatious, it is an abuse of process, it is predatory and an ambush by Engineers Canada to punish DSR Karis Consulting Inc. for its participation in protecting the public interest and exposing the criminal neglience of Engineering Canada in

the SARS-Cov-2 pandemic resulting in loss of life; and the Canadian Intellectual Property Office does not have Jurisdiction over the Canada business Corporations Act;

The application was not established that it was made in bad faith. The use of the Canada business corporations regulations was a fraudulent representation of the application of the Canada business regulations. For greater certainty the section of the Canada Business Corporations regulations are listed as well as the Canada Business Corporations Act:

> 26 For the purpose of paragraph 12(1)(a) of the Act, a corporate name is prohibited if it connotes that the corporation
>
> (c) is sponsored or controlled by or is connected with a university or an association of accountants, architects, engineers, lawyers, physicians or surgeons or another professional association recognized by the laws of Canada or a province, unless the appropriate university or professional association consents in writing to the use of the name
>
> 12 (1) A corporation shall not be incorporated or continued as a corporation under this Act with, have, carry on business under or identify itself by a name
>
> (a) that is, as prescribed, prohibited or deceptively misdescriptive; or
>
> (b) that is reserved for another corporation or intended corporation under section 11.

The the Canadian Intellectual Property Office does not have any jurisdiction over the Canada Business Corporations act; nor can it usurp the powers and/or capacity of the Director of Corporations Canada. The corporations name is DSR Karis Consulting Inc., and since the name of the corporation is DSR Karis Consulting Inc., this point is deceptive and moot. Any issue with a federal corporation's name is under the jurisdiction of the *Canada Business Corporations Act* and a matter entirely for the Director of Corporations Canada. ***This is an attempt to use the Canadian Intellectual Property Office to fraudulently exercise jurisdiction it does not posess***. This is not the proper place for a challenge of this nature and this must be dismissed for lack of jurisdiction.

(b) fraud is being used to punish DSR Karis Consulting Inc.

The entire case made by the opposing party falls apart as it is made under the premise of fraud, and fraud is a crime under the criminal code of Canada. Cases relating to the United States and the impact the crimes relating to the fraud and other crimes listed herein are part

of the subject matter of the motive to punish DSR Karis Consulting Inc. for whistlebloing criminal activity in Canada and the United States. The cases related to these matters are as follows:

- T-1404-20, Federal Court of Canada (Active)
- T-1403-20, Federal Court of Canada
- T-1367-20, Federal Court of Canada (Active)
- T-1229-20, Federal Court of Canada
- T-1115-20, Federal Court of Canada
- A-.158-22 Federal Court of Appeal (Active)
- A-221-21 Federal Court of Appeal (Active)
- A-239-21 Federal Court of Appeal (Active)
- A-277-21 Federal Court of Appeal (Active)
- A-337-21 Federal Court of Appeal (Active)
- CACV4048 Court of Appeal for Saskatchewan (Active)
- CACV3708 Court of Appeal for Saskatchewan
- CACV3717 Court of Appeal for Saskatchewan
- CACV3745 Court of Appeal for Saskatchewan (Active)
- CACV3798 Court of Appeal for Saskatchewan (Active)
- 39960 Supreme Court of Canada
- 39759 Supreme Court of Canada
- DIV 70 of 2020 Court of Queen's Bench of Saskatchewan (Active)
- QBG-156 of 2020 Court of Queen's Bench of Saskatchewan (Active)
- No. 2201 03422 Court of Queen's Bench of Alberta (Active)
- No. 2201 02896 Court of Queen's Bench of Alberta (Active)
- CV-21-58-H-SEH U.S. District Court of Montana (Active)
- No. 21-1365, United States Court of Appeals for the Tenth Circuit
- No. 1:21-CV-02285-GPG, United States District Court for the District of Colorado
- No. 20-1815, Supreme Court of the United States
- No. 1:21-CV-01418-LTB, United States District Court for the District of Colorado
- No. 1:21-CV-01618-LTB, United States District Court for the District of Colorado
- No. 1:21-cv-02208-GPG, United States District Court for the District of Colorado

- No. 1:21-CV-02183-GPG, United States District Court for the District of Colorado
- No. 1.21-cv-02053, United States District court for the District of Colorado
- No. A-21-CV-794-RP, United States District court for the Western District of Texas (Active)
- No. 21-1239, United States Court of Appeals for the Tenth Circuit
- No. 203-820-944, Aurora Colorado Immigration Court
- No. 1:21-CV-01794-GPG, United States District Court for the District of Colorado
- No. 1:21-cv-01794-GPG, United States District Court for the District of Colorado
- No. 2:20-cv-02218-JAD-DJA, United States District Court for the District of Nevada
- No. 21-15402, United States Court of Appeals for the Ninth Circuit
- No. 20-1282, Supreme Court of the United States
- No. _____, Supreme Court of the United States filed December 27 2021 number not yet assigned. (Active)
- OTP-CR-197 22 International Criminal Court (Active)

Several complaints have been made to the following law enforcement agencies

- K-Division of the Royal Canadian Mounted Police (Active)
- F-Division of the Royal Canadian Mounted Police (Active)
- E-Division of the Royal Canadian Mounted Police (Active)
- D-Division of the Royal Canadian Mounted Police (Active)
- O-Division of the Royal Canadian Mounted Police (Active)
- The Federeal Bureau of Investigation (Active)

For Greater Certainty fraud will be linked below:

> **Fraud**
>
> **380 (1)** Every one who, by deceit, falsehood or other fraudulent means, whether or not it is a false pretence within the meaning of this Act, defrauds the public or any person, whether ascertained or not, of any property, money or valuable security or any service,
>
> > **(a)** is guilty of an indictable offence and liable to a term of imprisonment not exceeding fourteen years, where the subject-matter of the offence is a testamentary instrument or the value of the subject-matter of the offence exceeds five thousand dollars; or
> >
> > **(b)** is guilty

> (i) of an indictable offence and is liable to imprisonment for a term not exceeding two years, or
>
> (ii) of an offence punishable on summary conviction,

Since this matter has been brought for the purposes of obtaining the opposition by deceit and falsehood, it will be reported to the appropriate authorities for criminal prosecution. Fraudulent documentation have been created retained and transmitted for the purposes of obtaining the removal of the trademark. This is clear intent to commit fraud and since it is clear that there was more than one party involved it is conspiracy to commit the fraud using the civil branch of the law. The timing of the opposition also demonstrates further conspiracy to the documentation provided to the opposing party by DSR Karis Consulting Inc. named "THE ENGINEERING OF BIOTERRORISM CHILD TRAFFICKING, TREASON AND THE CRIME OF AGGRESSION (A PRELIMINARY REPORT AND ANALYSIS OF RISK)" protected by United States copyright. It is highly probable that waiting to bring this opposition after DSR Karis Consulting Inc. was fraudulently named a litigation proxy by Justice Brown in T-1404-20 of the Federal Court of Canada. That fraudulent ruling made it an opportune time to allow a fraudulent claim to be brought before this tribunal knowing that any appeal would be frustrated by the Federal Court of Canada regardless of the criminal intent of the opposing party.

(c) The use of the trademark is permitted under the trademarks act;

Section 50 of the Trademarks act permits the use of the trademark based on th clear use of the language as linked below:

> **Licence to use trademark**
>
> **50 (1)** For the purposes of this Act, if an entity is licensed by or with the authority of the owner of a trademark to use the trademark in a country and the owner has, under the licence, direct or indirect control of the character or quality of the goods or services, then the use, advertisement or display of the trademark in that country as or in a trademark, trade name or otherwise by that entity has, and is deemed always to have had, the same effect as such a use, advertisement or display of the trademark in that country by the owner.

The opposing party has the onus to demonstrate that DSR Karis Consulting Inc. does not have direct or indirect control of the character or quality of goods or services. The opposing party has provided no such evidence of the same.

(d) the opposing party is trying to use provincial legislation to strike down federal law in a tribunal that lacks the jurisdiction to entertain constitutional challenges to legislation;

The opposing party cannot claim that provincial legislation can override federal legislation with respect to registering trademarks, and cannot seek to limit the jurisdiction of federal legislation with respect to trademarks as that is a matter beyond the scope of a tribunal as it is not of competent jurisdiction to challenge constitutional or jurisdictional matters. This issues is a dispute between provincial and federal statues and best settled in the Federal Court of Canada.

Furthermore, the claim that the trademark is not distinctive is wholly unreasonable as the term “engineering reimagined” is not commonly used any where as a phrase which is how it is intended to be used. The term “engineering reimagined” is clearly defined in documents possessed by the applicant. It is also listed on the internet as to what “engineering reimagined” is. **Engineering reimagined is tied to protecting to public interest and attacking the trade mark will negatively impact the ability of DSR Karis Consulting Inc. from protecting the extemination of human life that Engineers Canada seeks to facilitate by its deliberate criminal intent and shield the foregoing crimes.**

(e) the opposing party is assisting criminal actions of numerous parties who are attempting to destroy DSR Karis Consulting Inc. and its director for acting in the public interest, when the criminals are engaing in the most reprehesible crimes and are attempting to use a tribunal to conceal their criminal activity;

The question at hand is this, why is engineering canada coming after the corporation who is upholding what constitutes good engineering practice that applies to both persons educated as engineers or engineering technologists, when it of itself is not holding itself to its own standards. The opposing party has been provided information as to how poor engineering practice is being used to murder people in Canada and the United States and has not given a response to this pressing matter when the practice of “professional engineering” is to protect the public interest in the scope of its practice. Why were the “professional engineering” regulatory bodies woefully silent on the criminally negligent guidelines used during the SARS-Cov-2 pandemic? Why is it that frivolous, vexatious and immaterial claims are being made against the Applicant of the trademark when it is the sole entity speaking on behalf of the public interest?

It appears that the opposition to the trademark is nothing more than a malicious attack to assist the parties that are trying to destroy DSR Karis Consulting Inc. for protecting the public interest. This opposition will also inform Engineers Canada that they have been reported to 5 Divisions of the RCMP and the FBI by the United States citizen who holds to US Copyright to the materials that were submitted to them for giving aid and comfort to the parties who have been implicated in the crimes listed herein and the documentation provided to them which includes without limitation, **child trafficking for the purposes of sexual and/or financial exploitation, bioterrorism, treason, torture, the crime of aggression, criminal negligence, murder, forgery, mortgage fraud, fraud and crimes against humanity**. Should such a baseless claim be pursued to punish DSR Karis Consulting Inc., it will continue to defend itself and report any such actions that will assist or benefit in any material manner any of the criminals associated with those crimes. Based on the research report provided to Engineers Canada, it would be a better use of its resources to protect the interests of the public and not permit human lives to be exterminated due to poor “engineering” practices.

Furthermore, this claim by Engineers Canada should be thrown out in its entirety as it is a waste of taxpayers resources and it is clearly a colatteral attack that was coordinated with criminals who seek to disrupt the essential services of DSR Karis Consulting Inc. and torture and murder its director for acting with integrity and serving the public interest when acting as its agent.

Engineering Canada is using this tribunal to take actions to support those who are committing actions to commit treason in the United States by hindering the first witness to overt acts of treason against the United States of America, which includes without limitation conspiracy to prevent the enforcement of numerous statutes including without limitation, Article 3 Section 3 of the Constitution of the United States and the Convention against Torture; *Conspiracy to altogether prevent enforcement of statute of United States is conspiracy to commit treason by levying war against the United States*. Bryant v. United States, 257 F. 378, 1919 U.S. App LEXIS 2212(5th Cir. 1919), and since treaties are the supreme law of the land in the United States this case law applies; The violation and prevention of enforcement of numerous

treaties does allow for prosecution in the United States. *Treaty with foreign power was supreme law of land; Congress could provide punishment for its infraction on deprivation of or injury to right secured by it, as in case of ordinary law*. In re Grand Jury (1886, DC Or) 11 Sawy 522, 26 F 749. Based on this established case law on United States federal courts any person violating a treaty could be prosecuted for conspiring to overthrow a statute of the United States. The principles of comity demands that Canada respect United States case law with respect to its treason and what constitutes the overthrow of the United States or else it would be perceived as a hostile act when the Canadian system are protecting actors in Canada supporting treasonous actors in the United States. When actors in Canada are executing the same actions with the support of actors in the United States actively engaged in treasonable conduct, Canada must treat that conduct as treason within its borders and no aid or comfort in any manner can be given to those who are connected in any manner to the aforementioned actions. The actions of all of these parties threaten to severely interfere with the territorial integrity of Canada and the United States, and any overt act that assists the aforementioned inteference will be reported accordingly.

(f) The opposition has been made in extreme bad faith and it is frivolous, vexatious, and malicious and must be dismissed as there is an abundance of evidence to demonstrate the maliciousness of the opponent.

For the reasons listed above and the supporting documentation that will follow, this malicious action that is based on straw man arguments, fraud and intent to unlawfully punish must be dismissed as they have been brought forth in extreme bad faith with ill intent to aid parties engaged in treason in Canada and the United States. This documentation will be provided to the appropriate law enforcement agencies, other entities and to the public to demonstrate the malicious attacks directed at DSR Karis Consulting Inc. for acting within the public interest.

Dale Richardson

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To: ATTN: Supervisor **From:** DSR Karis Consulting Inc.
Fax: 1-613-960-6147 **Date:** Mar 06, 2023 01:36 AM
Organization: CRCC for RCMP
Subject: **URGENT CLAIM**

Documents for Claim. Place this before a supervisor.

Confidentiality Warning. This message is intended only for the use of the individual or entity to which it is addressed, and may

I am the director of DSR Karis Consulting Inc. and I certify that is a true copy of the federal corporations records

Dale James Richardson

DSR Karis Consulting Inc.
1292 95TH ST
NORTH BATTLEFORD
North Battleford, SK S9A0G2
Tel: [redacted] **Fax:** [redacted]

Fax

To: ATTN: Supervisor
From: DSR Karis Consulting Inc.
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Date: Mar 06, 2023 01:36 AM
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Dale Richardson Dale James Richardson

From: Dale Richardson
Sent: March 5, 2023 5:36 PM
To: K Chestermere Service (RCMP/GRC)
Cc: Agatha Richardson; [redacted]
Subject: ATTN: Detachment commander - Evidence for file number 2023-272542
Attachments: https___cocatalog.loc.gov_cgi-bin_Pwebrecon.pdf; THE ENGINEERING OF BIOTERRORISM, CHILD TRAFFICKING, TREASON AND THE CRIME OF AGGRESSION UPDATE II_2.pdf; CST Smith Harassment 02 28 2023 6_31 PM.m4a

Importance: High

Attacked is a copy to the link for evidence for the wellness check that is the subject of the complaint for criminal intimidation. Wellness Check AHS.mp4

This occurred at the Alberta office of DSR Karis Consulting Inc. (DSR Karis). This was made after the director made complaints against the AHS for its crimes committed in the jurisdiction of Chestermere. The agent for service of DSR Karis has advised DSR Karis that the doorbell camera did not work prior to CST TAYLOR and AHS nurse Hanson walking up to the door. The garage camera was functioning fine. After they left the camera was functioning properly. Inquiries were made to the alarm provider, and it was ascertained that the camera was down for approx. 1 hour. SGT RANDHAWA was also involved in the complaint, as he was involved in requesting the wellness check after CST NDAUTJE questioned the mental health of the director in an interview. The director's mother Agatha Richardson was present and assured NDAUTJE that there were no mental health issues ever for the director, Dale J. Richardson. In the video it can be seen that the next of kin to the director can be attesting that there are no mental health issues with the director. The director was abducted and tortured by rogue members of the Battlefords RCMP. Information was provided in the form of an RCMP freedom of information request A-2022-03945 (Richardson) that was included in evidence submitted to the detachment. Evidence was not properly filed by CST ROY at the Battlefords RCMP detachment and then fraudulent information was entered into the notes that did not match the audios of the interview (video evidence of the interview was also supplied) to construe the director as mentally ill. The director was then arrested attempting to enter the court of King's Bench in Saskatchewan on July 23, 2020, after the complaints made by the director were fraudulently altered to kidnap and torture the director that directly resulted in the harm in (A)-(C) in 83.01(b)(ii) of the criminal code. Numerous other crimes were committed as a result of that incident.

Furthermore, CST. SMITH and CST NEUFELD who brought the file number for the aforementioned complaint on February 28, 2023, intimidated the director of DSR Karis when he explained the critical weakness that was introduced into the infrastructure of Canada and the United States. When the high treason was being explained, it can be seen in the video that CST. SMITH unclips his firearm and places both his hands on his firearm in an intimidating manner. File numbers for this are to be issued for this as well as complaints were made and CST. SMITH called and then provided the same file number as he provided to the director for the complaint against TAYLOR, RANDHAWA and Hanson. The link to the crime can be seen here.
SMITH and NEUFELD Intimidation.mp4

The audio of SMITH harassing the director is also attached.

Agatha Richardson and Astra Richardson-Pereira are witnesses to the crimes and need to be interviewed and have been cc'd in the email for ease of contact.

A file number has not been issued to date for the intimidation complaint regarding CST SMITH and NEUFELD on February 28, 2023. A file number is expected before the end of business tomorrow. Furthermore, all of the

aforementioned members are no longer authorized to attend the registered office of DSR Karis in Alberta or Saskatchewan and requests that they be restrained from the same by whatever means available to the RCMP. The contents of this email will be forwarded to Ottawa for review based on the gross criminal conduct of the members involved in the complaints. This information will also be forwarded to the Federal Bureau of Investigation, members of the United States congress, grassroots media in Canada and the United States to inform the public of the gross crimes being suppressed.

Kind regards,

Dale Richardson, B.TECH, MET, TT (AB), Associate, (SK)
Chief Executive Officer
DSR Karis Consulting Inc.
Chestermere, AB
[redacted]
www.dsrkarisconsulting.com
[redacted]

DSR Karis Consulting Inc.

ENGINEERING REIMAGINED

I am the director of DSR Karis Consulting Inc. and I certify that is a true copy of the federal corporations records

Dale James Richardson

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Civilian Review and Complaints Commission for the RCMP

Commission civile d'examen et de traitement des plaintes relatives à la GRC

PUBLIC COMPLAINT FORM GUIDE

The Civilian Review and Complaints Commission for the RCMP (CRCC) is an independent agency that reviews complaints made by the public about the on-duty conduct of RCMP members.

The CRCC is not part of the RCMP.

Anyone with concerns about the conduct of an RCMP member can visit the CRCC website at www.complaintscommission.ca to learn more about the public complaint process.

CHECKLIST

Complaints must concern:

- [x] The conduct of an RCMP officer in the performance of their policing duties
- [x] An incident that occurred within the last 12 months*

*If the incident occurred more than 12 months ago, please provide additional information / justification for the delay. This information will be reviewed and an extension may be granted on a case-by-case basis.

Individuals making a complaint need to be:

- [x] Directly involved in the incident

or

- [ ] A witness to the incident

or

- [x] A person authorized to act on behalf of the person directly involved in the incident

COMPLAINTS CAN BE MADE

BY MAIL

Civilian Review and Complaints Commission for the RCMP

P.O. Box 1722, Station B
Ottawa, ON K1P 0B3

ONLINE

www.complaintscommission.ca

BY FAX

1- 613-952-8045

Civilian Review and Complaints Commission for the RCMP

Commission civile d'examen et de traitement des plaintes relatives à la GRC

Protected when completed (under the *Privacy Act*)

PUBLIC COMPLAINT FORM

PLEASE NOTE: You may file your complaint online at www.complaintscommission.ca

CONTACT INFORMATION (Required)

Family Name	Given Name	Date of birth (YEAR, MONTH, DAY)	
Richardson	Dale	2023/03/05	
Street / Mailing Address	**City**	**Province**	**Postal Code**
[redacted]	North Battleford	SK	[redacted]
Email address	**Primary Telephone number**	**Cellphone number**	
[redacted]	[redacted]		

QUESTIONS (Required)

What is your preferred language for correspondence?

☒ English ☐ French

How do you want to be contacted?

☒ Email ☐ Phone ☐ Mail

Were you directly involved in the incident(s)?

☒ Yes ☐ No

Have you previously filed a public complaint about this incident with the CRCC or the RCMP?

☒ Yes ☐ No

If yes, did you sign an agreement with the RCMP to resolve this complaint informally?

☐ Yes ☒ No

Did the incident occur within the last 12 months? If not, please provide an explanation for the delay in filing in **Details of Complaint** section of this form.

☒ Yes ☐ No

PLEASE NOTE: Exceptions to the one-year time limit are reviewed & granted on a case-by-case basis.

REPRESENTATIVE AUTHORIZATION

Complete the following section **ONLY** if you want the Civilian Review and Complaints Commission for the RCMP (the CRCC) and the RCMP to communicate directly with a legal representative or an advocate *instead* of yourself.

Family Name: _____

Given Name: _____

Telephone Number: _____

E-mail Address: _____

By providing this information, you are authorizing the CRCC and the RCMP to:

- Communicate directly with a legal representative or an advocate instead of yourself, and;
- Disclose information related to your complaint to your representative.

DETAILS OF COMPLAINT (complete as much as possible)

Date of incident: Feb 23, 2023 (Required) YEAR, MONTH, DAY

Location (city, town): Chestermere

Time of incident: Afternoon

Province: AB (Required)

Please describe the circumstances that led to your complaint as completely as possible. Please include:

- Who was involved
- What was said and done
- Was there any damage or injury
- Details that you feel contributed or led to the incident
- Reason for filing past 12-month time limit (if applicable)

This box will accept a maximum of 3100 characters. If you need more space, you may attach additional sheets of paper to this form.

There was a member that arrived at the Alberta office of DSR Karis Consulting Inc. (DSR Karis). The member was CST. TAYLOR, and was accompanied by an AHS nurse Hanson who was part of the PACT team. AHS was called by SGT RANDHAWA of the Chestermere detachment after DSR Karis and it's director filed a number of complaints that implicated the AHS in criminal complaints based on the research pioneered by Dale J. Richardson and research copyrighted by DSR Karis North Consulting Inc. (Karis North) a Delaware corporation. The document which is attached is titled "The Engineering of Bioterrorism, Child Trafficking, Treason, and the Crime of Aggression Update II (A preliminary report and analysis of risk). It outlines the engineering of the distribution of a biological weapon that interfered with the territorial integrity of the United States. I was tortured in Saskatchewan in July of 2020 in response to bringing this evidence forward previously. In Saskatchewan RCMP showed up at my house and the registered office of DSR Karis Consulting Inc and tried to arrest me on July 22, 2020. they were unsuccessful as I served them documents for a court hearing and they were evading service. I made torture complaints relating to the kidnapping and torture on July 23, 2020 at the Chestermere RCMP detachment. I was intimidated at the Chestermere office of DSR Karis and filed a criminal complaint and the number is 2023-272542. After I filed the complaint, CST SMITH and CST NEUFELD attended the Chestermere office of DSR Karis. SMITH unclipped his firearm and rested his hands on his firearms after I explained the high treason based on the attached report. I have attached an email and I have some digital evidence to add to the file. The short video will clearly make it clear that intimidation is happening. There must be oversight from this so that I do not get victimized by crime or killed. My oldest daughter fled to the United States and has been tortured, sexually assaulted repeatedly and trafficked because of the failure to report numerous crimes that are related to this. This will be attached to this complaint as well the related complaints. This information will be provided to the Federal Bureau of Investigation, U.S elected officials which includes without limitation Senator Ron Johnson and Rep. Matt Gaetz, independent media, churches and to the public in Canada and the United States. I have filed many complaints and I have not heard back anything. This will not stop until this is dealt with and people will start questioning what is being done because this will become very public. I am sick and tired of being ignored. I won't stop ever. deal with this because no human being deserves this kind of treatment. More evidence attached.

RCMP MEMBER(S)

List the RCMP member(s) whose conduct you are complaining about. If you are unsure, please write UNKNOWN and provide a brief, physical description of the member(s).

If you need more space, you may attach additional sheets of paper to this form.

Name	Rank	Detachment
TAYLOR	CST	Cochrane
RANDHAWA	SGT	Chestermere
SMITH	CST	Chestermere

WITNESS(ES) if applicable.

Note: Witnesses may include RCMP members you are NOT complaining about. If you are unsure, please write UNKNOWN and provide a brief, physical description of the witness(es) and/or member(s).

If you need more space, you may attach additional sheets of paper to this form.

First Name, Last Name	Contact Information (address, phone, email)
Astra Richardson-Pereira	[redacted]
Agatha Richardson	[redacted]

If you have provided the information requested above, your complaint should be complete.

After your submission is reviewed by an Intake Agent, you will receive correspondence on the status of your complaint, along with information explaining future steps in the complaint process. Although not necessary, should you still feel that you need to speak with an Intake Agent by phone please indicate below :

- the best number to reach you at
- a brief explanation why a call back is being requested

Please note that two attempts to contact you by phone will be made, which may take up to 15 business days. Calls will be placed during regular business hours Monday to Friday (Eastern Daylight Time) and may result in a delay in your complaint being reviewed.

Phone Number: [redacted]

BRIEF EXPLANATION

If you need more space, you may attach additional sheets of paper to this form.

I need an email to provide the video evidence of the intimidation that was supplied to the Chestermere RCMP.

PRIVACY & DISCLOSURE OF PERSONAL INFORMATION

By submitting a completed complaint form, you are authorizing the Commission to collect your personal information for the purposes related to Parts VI, VII, VII.1 and VII.2 of the RCMP Act. This information is held in personal information bank CRCC PPU 005, and you have a right to access this information in accordance with the *Privacy Act*.

NOTE: Completed public complaint forms, along with all other relevant documentation you provide to the CRCC will be forwarded to the RCMP for investigation pursuant to subsection 45.53(10) of the RCMP Act and an RCMP investigator may contact you to obtain a statement.

ACKNOWLEDGEMENT

PUBLIC USE ONLY (please note that complaint forms must be signed and dated)

I have reviewed this completed public complaint form and the information I have provided is true and accurate to the best of my knowledge.

Name (print): Dale J. Richardson

Signature: _____

Date (Required): 2023/03/05

(YEAR, MONTH, DAY)

RCMP USE ONLY (to be signed by RCMP members if form is completed on behalf of an individual)

I have reviewed this completed form with the individual and the information provided is true and accurate to the best of their knowledge.

Name & rank (print): _____

Signature: _____

Date (Required): _____

(YEAR, MONTH, DAY)

CONTACT INFORMATION

Completed complaint forms can be submitted

BY MAIL

Civilian Review and Complaints Commission for the RCMP

P.O. Box 1722, Station B
Ottawa, ON K1P 0B3

Complaint forms may also be completed

ONLINE

www.complaintscommission.ca

BY FAX

1-613-960-6147


RCMP
A. SMITH
POLICE


POLICE


POLICE
POLICE


POLICE
POLICE


POLICE
POLICE


POLICE
POLICE

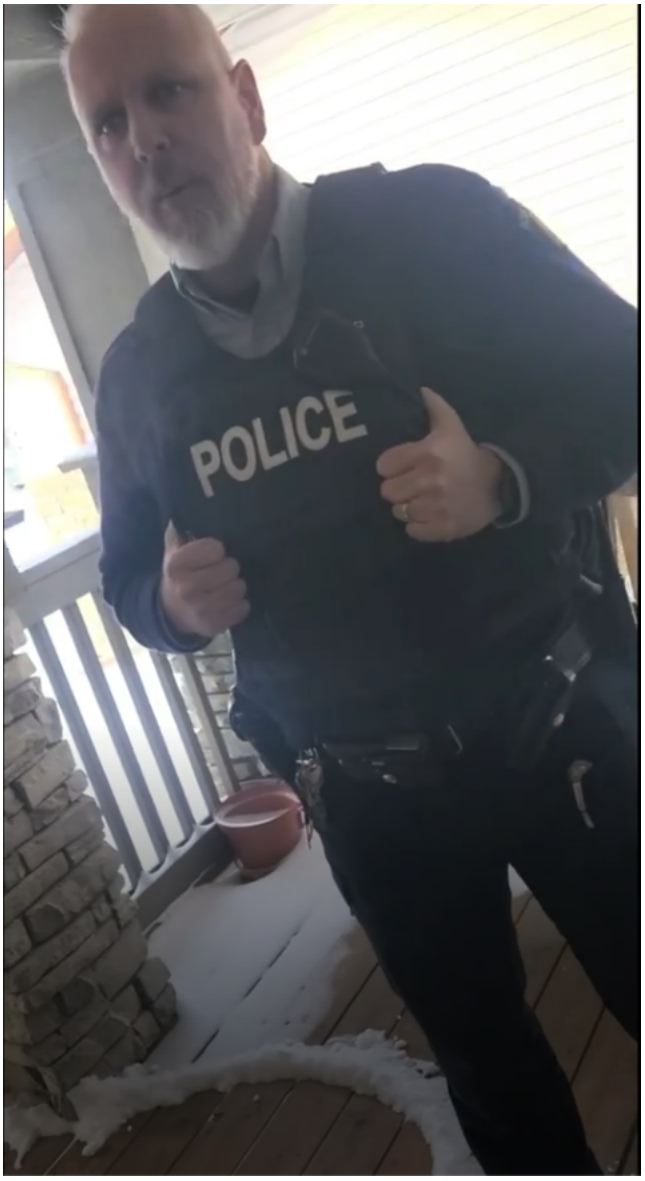

POLICE
POLICE


POLICE


POLICE


R-PACT


R-PACT


POLICE


POLICE

THE ENGINEERING OF BIOTERRORISM, CHILD TRAFFICKING, TREASON AND THE CRIME OF AGGRESSION UPDATE II
(A PRELIMINARY REPORT AND ANALYSIS OF RISK)

By
Dale J. Richardson
For
DSR Karis North Consulting Inc.
January 11, 2023

(SAVE THE CHILDREN)

THIS IS “ENGINEERING REIMAGINED”

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ACKNOWLEDGEMENTS

I would like to first and foremost acknowledge the Almighty God and my Lord and Saviour Jesus Christ; without God's help this report would have never been possible. I would like to acknowledge the knowledge that I have acquired from the writings of Ellen G. White, specifically relating to the principles of clean air and its importance to good health. Clean air is instrumental to good health and must be free from toxins. I would like to acknowledge my mother Agatha Richardson, my sister Astra N. Richardson-Pereira, my nephews Deron J. Thompson, and Isaiah Richardson-Pereira. I would especially like to acknowledge my two daughters Kaysha F.N. Richardson and Karis K.N. Richardson who have inspired me to keep going during the darkest moments during this ordeal. I want to acknowledge the brave men and women in law enforcement that have provided assistance in these matters; who have continued to uphold the law and the constitutions of their respective countries, especially of the United States of America and Canada; two countries whose people demonstrates towards each other what friendship looks like between countries.

I would like to thank those people who are a part of my church, the Seventh-Day Adventist Church who have spoken out about the wrongs done, and those of all walks of life who have stood up for what they believed was right in the best way that knew how. This would include the law abiding citizens who went to Ottawa, Canada looking for their God-given freedoms that were taken from them and their cousins in United States who went to Washington D.C. looking for the same.

I would like to thank my instructors for my post secondary institutions, Saskatchewan Polytechnic and Memorial University of Newfoundland, with out their instruction, this document would have never been possible, and from the American Society of Heating Refrigeration and Airconditioning Engineers who has provided me with invaluable resources and knowledge in producing this document. I would like to thank Association Of Science & Engineering Technology Professionals Of Alberta and Technology Professionals Saskatchewan for providing professional development and other resources that assisted in my journey. I would like to thank all the many people who have assisted in any way that has helped me in the creation of this document.

A MESSAGE FROM DALE J. RICHARDSON

I am creating this document as a culmination of over two years of research and work at the greatest cost to me, save my life. If my life is to be yielded as a result of this work, then I am willing to yield it. At this point in time all that I have left to give is my life. By the time many read this document I may very well have been laid to rest. If I have been laid to rest then this is my final act for the good of the people who need help. This is work has been done for you and your posterity as well as my posterity. This is a legacy that I have created and want to be left as a witness, whether I live or die. Many attempts have been made on my life and liberty to even be in a position to create this document. The sheer resistance that I have met, demonstrates the importance of what I am doing. I believe that I am to help those in need of my help, and given the magnitude of this situation, even if it costs me my life. This is the reason for my persistence in working to get this information into the hands of the people who can use it and benefit from it. No one has the right to deprive anyone of their God-given rights for any reason whatsoever.

The Declaration of Independence was written in the United States, but its principles apply to all Mankind. I will link an applicable section below:

We hold these Truths to be self-evident, that all Men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty, and the Pursuit of Happiness—-That to secure these Rights, Governments are instituted among Men, deriving their just Powers from the Consent of the Governed, that whenever any Form of Government becomes

destructive of these Ends, it is the Right of the People to alter or to abolish it, and to institute new Government, laying its Foundation on such Principles, and organizing its Powers in such Form, as to them shall seem most likely to effect their Safety and Happiness. Prudence, indeed, will dictate that Governments long established should not be changed for light and transient Causes; and accordingly all Experience hath shewn, that Mankind are more disposed to suffer, while Evils are sufferable, than to right themselves by abolishing the Forms to which they are accustomed. But when a long Train of Abuses and Usurpations, pursuing invariably the same Object, evinces a Design to reduce them under absolute Despotism, it is their Right, it is their Duty, to throw off such Government, and to provide new Guards for their future Security.

He has excited domestic Insurrections amongst us..... an undistinguished Destruction, of all Ages, Sexes and Conditions.

In every stage of these Oppressions we have Petitioned for Redress in the most humble Terms: Our repeated Petitions have been answered only by repeated Injury. A Prince, whose Character is thus marked by every act which may define a Tyrant, is unfit to be the Ruler of a free People.

For God, Country and My Fellow Man.

Dale Richardson
Director
DSR Karis North Consulting Inc.

Affirmed before me at the City of Chestermere, in the Province of Alberta, in the Country of Canada, this 11th day of January, 2023.

Notary Public ANDREW G. KEIRSTEAD
Barrister, Solicitor and Notary Public

CONTACT INFORMATION AND ADDRESS
DSR Karis North Consulting Inc.; 8 The Green, Ste A Dover, DE 19901; Telephone number: (306) 441-7010;
Email address: dale.richardson@dsrkarisconsulting.com

ANDREW G. KEIRSTEAD NOTARY PUBLIC PROVINCE OF ALBERTA

TO MY POSTERITY

A word to my little one Karis Kenna Nicole Richardson, this is why you have not seen your father. I want you to know that I love you with all my heart and all my soul. If I die before I see your face, I want to know that you can see the legacy of what I have done, and the man that I am. I want you to know the truth of why I was gone and the efforts that I made for you. Your life is of infinite value. You were given to me by the Almighty God as an answer to prayer, after I watched your mother in sorrow after losing your siblings that we will only get to see when Jesus Christ comes and calls them forth from the grave. I made an oath that I would raise you in the fear of the Lord if he would but grant us a child. God heard my plea and gave you to us. When God granted me the most

precious gift, I had to keep up my end of the promise. With all the strength that my Heavenly Father has given my I have used to fulfill my promise. This document is a small glimpse of everything that was done for you by God's grace and strength. It is my greatest prayer that you will get to know the God that I know, for He loves you far more than I could ever do, for I am just a sinful erring man.

I have missed so much of your life. I remember the times that we have had every day. Thinking of you gives me more strength each day to go on. You are my daughter and I love you. I am your father and I would pull the stars out of heaven for you because I love you. I have left this as a record of my actions. I pray to God that I can tell you these stories as we grow together; but if in God's providence I cannot, it is my prayer that you can read these words and know that it is my greatest sorrow that I could not be there as I promised. I will look for you in the earth made new. My little Karis, daddy loves you.

To my eldest, Kaysha F.N. Richardson, I love you as your father, I have longed within my soul to see you again. I remember with a fondness that I cannot describe with words the times that we had. The times that I watched you grow, the things I was able teach you, watching you develop and learn. I will always be proud of you as your father. Regardless of whether you angry at me or not, my love for you will never change. I would lay down my life for you, you are my daughter. I hope that you will have someone in your life who will give their all to you as I your father is prepared to do for you.

These words are left as a record of what I wanted to say to you when I saw you again. If I do sleep until the Lord returns, please tell your sister what your father was like, as you would be the best one to tell her about me from a daughters perspective. May God bless

and keep you. I have made many mistakes but I have done what I thought was best as a father to protect you. I love you.

Dale Richardson
Director
DSR Karis North Consulting Inc.

Affirmed before me at the City of Chestermere, in the Province of Alberta, in the Country of Canada, this 11th day of January, 2023.

Notary Public ANDREW G. KEIRSTEAD
Barrister, Solicitor and Notary Public

CONTACT INFORMATION AND ADDRESS
DSR Karis North Consulting Inc.; 8 The Green, Ste A Dover, DE 19901; Telephone number: (306) 441-7010; Email address: dale.richardson@dsrkarisconsulting.com

ANDREW G. KEIRSTEAD NOTARY PUBLIC PROVINCE OF ALBERTA

ABSTRACT

The SARS-Cov-2 has impacted and threatened the lives of many people on a global scale. This pandemic has brought many challenges and risks to the people of the world. This summary focuses on discussing briefly the misrepresentation of the mixing factor on the Center for Disease Control and Prevention's table S-31 for Aerosol Generating Medical Procedures that is present in the Saskatchewan Health Authority 's guidance document of the same. This guidance document from the CDC is present in many jurisdictions in Canada. It introduces an unknown into the system that cannot be accounted for. Since air mixing is a complex area of engineering, the guidance places the responsibility of making engineering decisions on a dental professional. The risk allows for an unknown into the system that creates failures unknown to the clinic owner. This unknown is a direct result of having an incompetent technician assess something he or she has no understanding of. In a worst case scenario these failures could be used to deliver a biological weapon masked as an outbreak. This danger is now compounded by the introduction of a new virus in May of 2022, Monkeypox. A preliminary examination of existing research into Monkeypox and its potential use as a biological weapon demands further study. This reasoning is supported by evidence contained in peer reviewed research that provided that Monkeypox is being studied in level 4 labs for aerosol transmission (Gearin, 2021). A brief technology assessment and discussion on risk on implementation is examined and discussed. Bioterrorism is a probable outcome. A brief statistical analysis part of risk analysis suggests the operation of organized crime operating in the judiciary that is suppressing this report from getting to the public. Extreme bias towards the author has been observed as has been child trafficking for the purposes of exploitation to punish and torture the author for presenting the findings of this report and previous iterations of the research. Further study is needed.

BACKGROUND

SARS-Cov-2 has impacted and threatened the lives of many people on a global scale. The World Health organization has indicated that SARS-Cov-2 may be transmitted through aerosols in the following statement: “The virus can also spread in poorly ventilated and/or crowded indoor settings, where people tend to spend longer periods of time.” (WHO, 2021). The following quote is taken from HVAC Design Manual for Hospitals and Clinics 2013 “As Hospital-acquired infections (HAIs, also referred to as nosocomial infections) have a significant impact on patient care. Mortality rates from HAIs are significant and affect the overall cost of health care delivery. In the United States, HAIs occur in an estimated 4% to 5% of admitted patients; at an estimated annual cost approaching $7 billion. It is generally agreed that 80 to 90% of HAIs are transmitted by direct contact, with 10% to 20% resulting from airborne transmission (representing 0.4% to 1% of admitted patients)” (Koenigshofer et al., 2013). It appears that Engineering has an integral role in mitigating the spread of SARS-Cov-2, because aerosols have been identified as a likely mode of transmission for SARS-Cov-2, and HVAC systems are used in infection control.

In May of 2022, Monkeypox started to make headlines after several cases of Monkeypox were identified in the United States and Europe. “Scientists at the Centers for Disease Control and Prevention (CDC) are collaborating with the Massachusetts Department of Public Health to investigate a situation in which a U.S. resident tested positive for monkeypox on May 18 after returning to the U.S. from Canada. CDC is also tracking multiple clusters of monkeypox that have been reported in early- to mid-May in several

countries that don't normally report monkeypox, including in Europe and North America" (CDC, 2021).

The modes of transmission for Monkeypox is not well known and understood. "The mode of transmission between infected animals and humans is not well defined (18). Direct mucocutaneous contact and respiratory routes have been implicated in epidemiologic and experimental research" (Bernard & Anderson, 2006). Fatalites from Monkeypox can be as high as 33% of those exposed as well as increased risk to children as the quote from the following study suggests: "Case-fatality rates in African outbreaks range from 4% to 33%... and are high among children….(Bernard & Anderson, 2006). This is further compounded by the variability in the fatality rates could be attributed to variability in the virulence of the Monkeypox strains (Bernard & Anderson, 2006). Inadequate understanding of modes of transmission and potentially high fatality creates substantial risks that must be addressed.

Clean air is instrumental to good health and must be free from toxins. This principle formed the foundation of his research. The guidelines placed out by the Saskatchewan Health Authority ("SHA") relating to the Aerosol Generating Medical Procedures (AGMP's) are incomplete. The document place out by the SHA is based off of Table S-31 issued by the Center for Disease Control and Prevention ("CDC"). These documents are shown in fig 1 and fig 2.

<table>
<tr><td></td><td>

Airborne precautions/aerosolize settle time signage should remain in place until after AGMP has been performed and air settle time has been achieved. The settle time should never impact patient care needs and should not delay essential patient or staff movement in and out of the room
If the number of air changes per hour is unknown, then air settle time for a patient room is 2 hours or 120 minutes
If the number of air changes per hour is known, refer to Table 1

Table 1: Time in Minutes Needed (by number of air exchanges per hour) to Reduce Airborne Contaminants by 99%. Adapted from Airborne Contaminant Removal –Centers of Disease Control, USA
<table>
<tr><th>Air exchanges per hour</th><th>99%</th></tr>
<tr><td>2</td><td>138</td></tr>
<tr><td>4</td><td>69</td></tr>
<tr><td>6</td><td>46</td></tr>
<tr><td>12</td><td>23</td></tr>
<tr><td>15</td><td>18</td></tr>
<tr><td>20</td><td>14</td></tr>
</table>

Before air settle time has been achieved: Do NOT admit a new patient. If entering room, wear an N95 respirator
After air settle time has been achieved: Airborne Precautions/aerosolize settle time signage can be removed. N95 respirators are no longer required

Note: Some patients may require ongoing or continuous AGMPs (e.g., CPAP, BiPAP, Optiflow). Under these circumstances airborne precautions sign/aerosolize settle time signage must remain posted for the duration of the therapy and up until therapy has been discontinued and air settle time has been achieved
</td></tr>
<tr><td>CONTINUOUS MASK USE</td><td>

Refer to the following documents:

Continuous Mask Use (Staff)
CV-19 G0043 Masking Guidelines for Patients/Residents/Clients
CV-19 G0051 Masking and PPE Guidelines for Family Member/Support

</td></tr>
<tr><td>CONTINUOUS EYE PROTECTION</td><td>

Refer to the following documents:

Continuous Eye Protection (staff)
CV-19 G0051 Masking and PPE Guidelines for Family Member/Support

</td></tr>
<tr><td>PERSONAL PROTECTIVE EQUIPMENT (PPE)</td><td>

For PPE requirements, refer to PPE Guidelines for Staff in All Health Care Settings* during COVID-19
Staff should refer to and follow the instructions for putting on (donning) and taking off (doffing) PPE

</td></tr>
<tr><td>STAFF ATTIRE/ PERSONAL ITEMS</td><td>

Refer to Ways to Stay Safe at Work and Frontline Worker Safety Guide

</td></tr>
</table>

Figure 1: SHA Table (Courtesy of SHA)

Table B.1. Air changes/hour (ACH) and time required for airborne-contaminant removal by efficiency *

ACH § ¶	Time (mins.) required for removal 99% efficiency	Time (mins.) required for removal 99.9% efficiency
2	138	207
4	69	104
6+	46	69
8	35	52
10+	28	41
12+	23	35
15+	18	28
20	14	21
50	6	8

* This table is revised from Table S3-1 in reference 4 and has been adapted from the formula for the rate of purging airborne contaminants presented in reference 1435.

+ Denotes frequently cited ACH for patient-care areas.

§ Values were derived from the formula:

$$t2 - t1 = - [\ln (C2 / C1) / (Q / V)] \times 60, \text{ with } t1 = 0$$

where

t1 = initial timepoint in minutes
t2 = final timepoint in minutes
C1 = initial concentration of contaminant
C2 = final concentration of contaminant
C2 / C1 = 1 – (removal efficiency / 100)
Q = air flow rate in cubic feet/hour
V = room volume in cubic feet
Q / V = ACH

¶ Values apply to an empty room with no aerosol-generating source. With a person present and generating aerosol, this table would not apply. Other equations are available that include a constant generating source. However, certain diseases (e.g., infectious tuberculosis) are not likely to be aerosolized at a constant rate. The times given assume perfect mixing of the air within the space (i.e., mixing factor = 1). However, perfect mixing usually does not occur. Removal times will be longer in rooms or areas with imperfect mixing or air stagnation.[213] Caution should be exercised in using this table in such situations. For booths or other local ventilation enclosures, manufacturers' instructions should be consulted.

Figure 2: CDC Table S-31 (Courtesy of CDC)

In fig 1 it is noted that there is an arbitrary time of 2 hours of 120 minutes. The full chart that this was taken from has more information. The information of interest is at the bottom of the page. “The times given assume perfect mixing of

TABLE S3-1. Air changes per hour (ACH) and time in minutes required for removal efficiencies of 90%, 99%, and 99.9% of airborne contaminants*

ACH	Minutes required for a removal efficiency of:		
	90%	99%	99.9%
1	138	276	414
2	69	138	207
3	46	92	138
4	35	69	104
5	28	55	83
6	23	46	69
7	20	39	59
8	17	35	52
9	15	31	46
10	14	28	41
11	13	25	38
12	12	23	35
13	11	21	32
14	10	20	30
15	9	18	28
16	9	17	26
17	8	16	24
18	8	15	23
19	7	15	22
20	7	14	21
25	6	11	17
30	5	9	14
35	4	8	12
40	3	7	10
45	3	6	9
50	3	6	8

*This table has been adapted from the formula for the rate of purging airborne contaminants (*99*). Values have been derived from the formula $t_1 = [\ln (C_2 \div C_1) \div (Q \div V)] \times 60$, with $T_1 = 0$ and $C_2 \div C_1 -$ (removal efficiency ÷ 100), and where:

t_1 = initial timepoint
C_1 = initial concentration of contaminant
C_2 = final concentration of contaminants
Q = air flow rate (cubic feet per hour)
V = room volume (cubic feet)
$Q \div V$ = ACH

The times given assume perfect mixing of the air within the space (i.e., mixing factor = 1). However, perfect mixing usually does not occur, and the mixing factor could be as high as 10 if air distribution is very poor (*98*). The required time is derived by multiplying the appropriate time from the table by the mixing factor that has been determined for the booth or room. The factor and required time should be included in the operating instructions provided by the manufacturer of the booth or enclosure, and these instructions should be followed.

Figure 3: Table S-31 1994 (Courtesy of CDC)

the air within a space (i.e., mixing factor = 1). **However, perfect mixing usually does not occur**." (Emphasis supplied). This poses a problem. The mixing factor is not defined on this document anywhere. It took some digging to find where the mixing factor is defined. See fig. 3

Reading the information on the bottom of fig.3 demonstrates the importance of defining the mixing factor. It alerts you that the times on the chart could be multiplied by up to 10. The issues is not when a competent engineer or technologist is looking at the chart, it is when incompetent persons are given this information and expected to make decisions on something that they know nothing about. This is discussed in more detail in Appendix A.

A statistical analysis will be conducted in light of recent events surrounding this report and previous variations of the information contained within and the response of several judicial bodies to the information. The brief statistical analysis will be attached to the risk analysis.

MORE ON MONKEYPOX

There are some inconsistencies with the recommendations for infection controls for Monkeypox, even within the CDC website. The hospital infection control recommendations includes the following "In addition, because of the theoretical risk of airborne transmission of monkeypox virus, airborne precautions should be applied whenever possible. If a patient presenting for care at a hospital or other health care facility is suspected of having monkeypox, infection control personnel should be notified immediately" ("Infection Control: Hospital | Monkeypox | Poxvirus | CDC," 2019).

However, the section of transmission for vetrinarians has this recommendation; ““The route of transmission from animal-to-animal may occur through respiratory droplets, inhalation of aerosolized virus or organic matter containing virus particles (e.g., via the disturbance of virus in contaminated bedding), skin abrasions, the eye, or through the ingestion of infected animal tissue” (“Transmission | Monkeypox | Poxvirus | CDC,” 2018).

The table shown below states to rule out airborne transmission when determining a diagnosis of Monkeypox.

Infection/Condition	Type of Precaution	Duration of Precaution	Precautions/Comments
Monkeypox	Airborne + Contact + Standard	Airborne – Until monkeypox confirmed and smallpox excluded Contact – Until lesions crusted	See CDC's Monkeypox website (accessed September 2018). [Current version of this document may differ from original.] for most current recommendations. Transmission in hospital settings unlikely [269]. Pre- and postexposure smallpox vaccine recommended for exposed HCWs.

Figure 4: Courtesy of the Center for Disease Control and Prevention

There is evidence that is problematic with Monkeypox is that it has been reported to be a biological agent as of 2021 that is can be researched in a Bio Safetly Level 4 Lab(“BSL-4”) (See Figure 5: Courtesy of Chemical Engineering Progress and the CDC). In 1998 there were only two know labs that handle Monkeypox “Research with variola virus is restricted to two WHO-approved BSL-4 and ABSL-4 facilities; one is the CDC in Atlanta, GA, and the other is the State Research Center of Virology and Biotechnology (VECTOR) in Koltsovo, Russia” (Breman & Henderson, 1998). A BSL-4 laboratory in Tokyo has been

identified by the WHO as one that has been handling Monkeypox for the purposes of studying "virus therapies" and "studies of the efficacy of a highly attenuated smallpox vaccine in a nonhuman primate model" (World Health Organization, 2018). This BSL-4 was also responsible for handling bio-terrorism relating to SARS and Smallpox.

Table 1. The Centers for Disease Control and Prevention (CDC) designate the biosafety level (BSL) of labs with a four-tiered scale.

Safety Level	Description	Diseases Studied	Safety Considerations
BSL-1	Study of pathogens that do not usually cause disease	Non-infectious educational strains of *Escherichia coli* and diseases not known to affect humans such as certain plant and animal pathogens	Basic disinfection practices and personal protective equipment (PPE) such as gloves and lab coat
BSL-2	Study of diseases with a moderate level of risk of illness	Human immunodeficiency virus (HIV); Hepatitis A, B, and C; Salmonella; Zika	Biological safety cabinets (BSCs) that provide ventilated spaces to work with pathogens, doors that automatically close and lock, autoclave for decontaminating materials exposed to pathogens
BSL-3	Study of diseases that could cause death if inhaled	SARS-CoV-2; Middle East Respiratory Syndrome (MERS); Tuberculosis; West Nile virus; Yellow fever; Avian flu	Ducted air ventilation system with high-efficiency particulate absorbing (HEPA) filtration; PPE such as gowns/scrubs, masks and goggles/face shields, and replacing gloves whenever contaminated
BSL-4	Study of pathogens transmitted as aerosols that can cause deadly diseases for which there are no current cures	Ebola, Marburg, Crimean-Congo Hemorraghic Fever (CCHF), Lassa, and other hemorrhagic fevers; Smallpox (variola virus); Monkeypox; Eastern equine encephalitis (EEE); *Bacillus anthracis* (anthrax)	Airlocked entrances; changing clothes when entering; non-recirculating ventilation, airtight full-body PPE suit connected to external air supply; showering when exiting

Figure 5: Courtesy of Chemical Engineering Progress and the CDC

There is some vague language being used to describe the transmission of Monkeypox as well. "Health officials are worried the virus may currently be spreading undetected through community transmission, possibly through a new mechanism or route. Where and how infections are occurring are still under investigation" (Rohde, 2022). According to the Imperial London College, "Research on monkeypox virus itself can only be conducted in bio-secure biosafety level 4 laboratories such as those at PHE Porton in the UK" (Evans, 2021). Some studies suggests that droplets can be spread by fans and mechanical ventilation systems along with aerosol transmission (Sopeyin et al., 2020).

LITERATURE REVIEW

There as a number of issue that are not resolved in an HVAC setting to allow for the spread of microorganisms. “It is well understood heating, ventilation and air-conditioning (HVAC) systems' cooling coils are reservoirs of microorganisms typically identified with poor IAQ and Hospital Acquired Infections. In addition to poor IAQ these microorganisms develop a biofilm on HVAC coils resulting in poor mechanical performance.” (Leach & Taylor 2017) When this is considered, keeping any microorganisms from building up on cooling coils is extremely important and is often overlooked as contamination could introduce other pathogens coming in the clean air supply. “The generation of aerosols in dental practice, in association with the high-transmissibility of SARS-CoV-2 through aerosol-generation procedures, the simultaneous provision of dental services to patients in the same areas, and the fact that asymptomatic and pre-symptomatic infected persons may transmit the virus, render the implementation of specific infection prevention and control measures imperative” (Maltezou et al., 2021) If this is true in a dental school setting, it is reasonable to assume that the same would be true in a dental clinic setting.

“The control of the indoor environment is crucial to reduce the risk of infection in these environments. Heating, ventilation, air conditioning (HVAC) systems are used to create a healthy, thermal-comfort indoor environments. Thus, the rational use of HVAC systems is of great importance for the environmental control to reduce infection risk and to improve human wellbeing in the pandemic.” (Ding et al., 2020) It is becoming evident that HVAC systems play an important role in infection controls to reduce the risk of infection. “However, HVAC systems have also become a vehicle of contamination of indoor air with potentially pathogenic microorganisms” (Sibanda, Selvarajan, Ogola,

Obieze & Tekere, 2021). It is not suggested that it is the only control, but it is one of many and it plays a crucial and often overlooked role in infection control. There must be a distinction between HVAC systems in health care and other buildings and this is sounded by Dan Koenigshofer PE, MSPH, HFDP, SASHE "HVAC in a school or office building is not the same as in healthcare, where the No. 1 priority is infection control," (Koenigshofer, 2013). This is poses a significant problem, as there isn't much direction given for dental clinics in this regard in a number of jurisdictions (DSR Karis, 2020). The issues arising from the improper representation of the mixing factor and other factors presents a problem facing clinicians when making informed decisions regarding infection controls in their clinics. "With so many airflow solutions available to protect patients and staff from COVID-19, clinicians need to do homework to select the best fit for their practices." (Goff, 2021) The recommendation is to have a qualified engineer or technologist assess the clinic for the clinicians as they are not competent to assess the situation in an area outside of their expertise.

A recent study has demonstrated that there is benefits to using UV technology for pandemic mitigation. This study stated "the SARS-CoV-2 virus is relatively easily inactivated by UV-C light" (Beggs & Avital, 2020). While this study was conducted using upper room UVGI, it is reasonable to suggest that a properly placed UV would achieve a similar result for any SARS-Cov-2 virus in an HVAC system.

"The potential health risks from air conditioning have been recognized by the U.S. EPA.'^ and in every country studied, the presence of AC systems in office buildings relative to naturally ventilated offices has been associated with a 30 to 200% increase in respiratory and other health symptoms." Links between the presence of microbes on AC coils and

human health have been observed both through documenting episodes of respiratory illness caused by AC systems with microbial contamination'^ and in an epidemiological study of building AC and health that tracked symptoms in over 700 office workers during times when the building AC systems had ultraviolet (UV) or no UV sterilization of cooling coils. Results demonstrated a 99% reduction in microbial growth on cooling coils when UV lights were used, and a 40% decrease in respiratory symptoms in building occupants was observed when UV systems were in use." (Bakker et al., 2020)

Industry claims state that a buildup of 0.002 biofilm fouling could reduce coil efficiency by up to 37%.("Air Purification / UV Lights | Clean The Air Inside Your Home or Business", 2021) "A recent simulation of UVG-CC in a representative office building in Philadelphia found that eliminating biofouling led to a decrease in pump energy use between 15% and 21% as well as a decrease in fan energy use ranging between 15% and 23%" (Luongo, 2010).

RESEARCH METHODS AND METHODOLOGY

A quasi-experimental approach will be taken using data from a previous study by the author (Richardson, 2021) that cross referenced existing governmental guidelines against standards set by ASHRAE, and the 1994 Center for Disease Control (CDC) Table S-31 on which settling times for AGMP's are determined, and a brief technology assessment will be conducted to demonstrate the complexity of implementation of technology within the criteria set out by the aforementioned bodies. Quantitative research and qualitative aspects will be incorporated into the research. It is hypothesized that the fixed system

will provide the most benefit. Cooling loads will be determined based on ASHRAE design conditions from the 2017 ASHRAE handbook using the Radiant Time Series Method. Airflow will also be determined. A current efficiency of the HVAC system and components will be examined and compared with losses due to biofilm from industry claims. This data with then be used to perform a financial analysis to determine if there are any losses from inefficiencies. A simulation of a dental clinic will be examined. It is hypothesized that the fixed system will create the greatest cost savings in the simulation. An interpretation of the results will provided. A qualitative risk discussion will be presented using relevant information, and issues surrounding the current Aerosol Generating Medical Procedures guidance issued by the Saskatchewan Health Authority and actions related to it. A brief statistical analysis will be conducted and discussed using qualitative and quantitative data with a qualitative interpretation of the results. Accounting for and mitigation of any real or perceived bias must be accomplished for any qualitative interpretation of information.

RESEARCH METHODS

OPERATIONAL

A brief qualitative discussion of potential hazards arising from the various units will be examined.

FINANCIAL

The data from the cooling load calculation will be used to perform a financial analysis to determine the level of losses due to inefficiencies. An operating expense comparison will be conducted to determine the most economical technology to implement. A sensitivity

analysis will be conducted in a number of scenarios to determine the cost of inefficiencies arising from biofilm buildup on the coils.

RISK ANALYSIS

The risk will examine the risks associated with the current infection control protocols issued by the Saskatchewan Health Authority , legal and other actions arising from it, the threat of bioterrorism, ramifications of observed criminal actions associated with reporting the negligent Aerosol Generating Medical Procedures guidance and potential consequences. A brief statistical analysis will be conducted to enhance the risk analysis. Observations and association will be discussed in the context of risk assessment.

ASSESSMENT AND ANALYSIS

TECHNICAL SCOPE

Many common dental procedures generate aerosols, dusts, and particulates. The aerosols/dusts may contain microorganisms (both pathogenic and benign), metals (e.g., mercury fumes), and other substances (e.g., silicone dusts, latex allergens). Some measurements indicate that levels of bioaerosols during and immediately following a procedure can be extremely high.... At this time, only limited information and research are available on the level, nature, or persistence of bioaerosol and particulate contamination in dental facilities. Consider using local exhaust ventilation (possibly recirculating with HEPA filtration) to help capture and control these aerosols, because dental care providers and patients are often close together. (Ashrae 2019 Handbook Applications)

A reduction of HAIs will have a beneficial impact by reducing in the pressure on an already overburdened health care system in the midst of a pandemic. HAIs includes clinic transmission, and a significant number of cases arise from airborne transmission. It is important to determine what implementation with respect to airborne transmission complies with good engineering practice and follows the CSA and ASHRAE guidelines. Proper implementation of engineering infection controls can help reduce transmission rates of SARS-Cov-2. It is also imperative that the system is designed with considerations of any future pandemics.

There are a number of limitations to this study. The HVAC system is an extremely complex system and a number of assumptions must be made to complete the study in the required time. The budgetary constraints limit the depth of the study. The lack of a practical case has complicated the study as simulations for HVAC systems are complex and work intensive for accuracy. Many of the costs associated with the purchase and installation of the components are not readily available to the public, and assumptions on them must be made. There is the qualitative aspect that is based on opinion of available facts, and bias must be accounted for in the relation of all qualitative aspects when referring to the interpretation of data. The risk section is based on the possibility of outcomes based on observed actions, and other data, there are potentially other risks not accounted for based on limited research in this area.

DEFINITION OF THE TECHNOLOGY

The Air conditioning system is very complex and for the purposes of this study be represented in a simplistic manner to focus on the areas of need. A representation of a

roof top unit can be seen in figure 11. It consists of a condenser, compressor, the condenser fan, fan motor fan belt, evaporator supply air and return air. The air conditioner is an essential system to provide quality air to the occupants inside of a building. Poor quality air has been linked to decreased health from sick building syndrome to transmission of SARS-Cov-2. Air purification technologies are an integral part of a ventilation system to improve air quality in a number of settings and in this particular case the dental clinic setting. Air purification is required for AGMP's in medical clinic settings. Since it has been determined that SARS-Cov-2 is likely spread through aerosols, air purification is a part of pandemic mitigation. This purification is attained by filtration with a MERV 13 or higher filter or a HEPA filter. UV Germicidal lights are used in air purification as well or a combination of both. This purification can be achieved with MERV 13 or higher filtration and UV built into the system, or HEPA filtration, or a combination of HEPA filtration and UV in a portable unit. In the fixed system, purification is achieved by filtration at the exhaust, and UV Germicidal lights in the air handler and or in the ductwork. Filtration is placed for outdoor air coming into the space and filtration can also be placed in the room.

The portion that will be the focus of this report is air purification comparison. An air handler will be considered for this portion of the research (see figure 11) and the ultraviolet lights that can be used to purify air, a fixed filtration system, in comparison with three portable units. Four systems will be examined in the course of this assessment. They are as follows:

1) Fresh aire UV Blue-Tube XL (TUV-BTXL) with a polarized filtration system

This is a fixed system comprising of a filtration system and germicidal UV mountable in duct or in an air-handling unit.

2) Carrier OptiClean™ Negative Air Machine

The Carrier OptiClean is a Negative Air Machine that uses filtration to achieve Air Purification.

3) Sanuvox s300

The Sanuvox S300 is a portable air purifier with germicidal UV and HEPA filtration

4) Austin HealthMate HM400

This is a portable HEPA filtration unit.

MECHANICAL SPECIFICATIONS

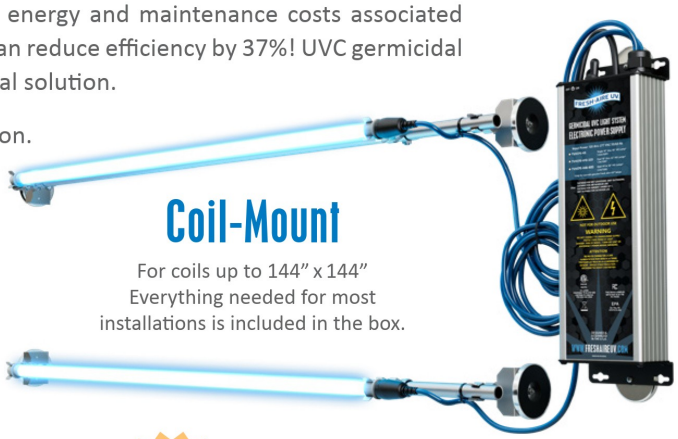
The technology assessed will be the Blue-Tube XL germicidal UV light combined with a MERV 13 rated filter installed into an HVAC system. The second component for the assessment is Carrier OptiClean™ Negative Air Machine. The specifications of the unit will be shown below and information for this unit will be included in a comparison. The third component to be assessed is S300 MED2 PORTABLE UV AIR PURIFIER & FILTER the specifications for the unit will be listed below and its information will be included in a comparison later on. The final component for the assessment is the Austin HealthMate HM400.

BLUE-TUBE XL
COMMERCIAL UVC SYSTEM

FRESH-AIRE UV
The Indoor Air Quality Expert

This system is designed to improve indoor air quality by sterilizing airborne viruses, bacteria, and allergens. When coil-mounted it also saves energy and maintenance costs associated with commercial HVAC. A biofilm of only 0.002" can reduce efficiency by 37%! UVC germicidal disinfection is the most cost-effective and practical solution.

Blue-Tube XL offers easy and flexible installation. It includes an advanced multi-voltage, water-resistant power supply. All parts (except lamps) are covered by a lifetime warranty. This system also improves indoor air quality by sterilizing airborne bacteria, viruses, and allergens.



Coil-Mount
For coils up to 144" x 144"
Everything needed for most installations is included in the box.

FEATURES
- Coil-mount for optimal biofilm disinfection
- Duct-mount for optimal airborne disinfection
- Fits coils up to 144" x 144"*
- High-output 2-year guaranteed UVC lamps
- Includes everything needed for most installations
- Scalable design for multi-lamp configurations
- Water-resistant 110-277V auto-sensing power supply
- Optional door interlock switch (TUVC-INTLCK-SP)
- Produces no harmful ozone

ALL PARTS LIFETIME WARRANTY EXCEPT LAMPS

Duct-Mount
Use 1, 2, or 3 BTXL Dual Systems for duct-mounting parallel to the air stream for maximum airborne disinfection.

BENEFITS
- 99.9% surface disinfection GUARANTEED (coil)
- Sterilizes mold, bacteria, viruses
- Disinfects coil & drain pan
- Improves HVAC system efficiency (coil)
- Improves indoor air quality

Control Box

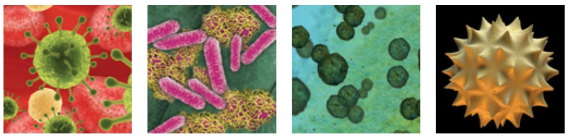
Commercial Series Accessories
View PDF

UVC Radiometer

Safety Interlock Switch

UVC Lamp Shield

BLUE-TUBE XL
STERILIZES BIOLOGICAL PATHOGENS



VIRUSES BACTERIA MOLD ALLERGENS

Figure 6: Courtesy of Fresh-Aire UV

FN1AAF
Size 005
Carrier OptiClean™ Negative Air Machine

Product Data

A200220

Fig. 1 – OptiClean™ Negative Air Machine

The Carrier OptiClean™ Negative Air Machine (NAM) uses highly efficient filters, a quiet heavy duty motor, and ducting to remove contaminated air from a containment area or room. The filtered (clean) air is then exhausted outside of the containment area to either the outside or another location in the building. This movement of air creates negative pressure (a vacuum effect) relative to surrounding areas, which helps limit the spread of contaminants to other areas inside the structure.

When applied as part of a properly designed commercial mechanical system, the NAM will provide suitable negative air pressure as described in ASHRAE standard 170.

The NAM is not intended for residential use.

STANDARD FEATURES

- 99.97% efficient long-life HEPA filter removes particles as small as 0.3 microns
- Standard MERV 7 or higher pre-filter available locally
- Minimum 500 CFM
- Meets or exceeds ASHRAE Standard 170: Ventilation of Health Care Facilities
- Vertical design for smaller footprint compared to many competitors
- Portable and adaptable to nearly any location
- Heavy duty locking casters for easy and smooth transport
- HEPA filter rack and sealing design meet air leakage requirement
- Red lighted indicator to alert user when filters are overloaded (generally means pre-filter requires replacement)
- Green ON/OFF switch illuminates to verify when running
- 10-foot long power cord with strain relief
- 115V
- Galvanized steel, pre-painted cabinet is fully insulated
- Exhaust transition plate to standard 10-inch round duct included
- UL® Listed
- One year limited warranty

A200221

Fig. 2 – Room Setup Example

Figure 7: Courtesy of Carrier

SANUVOX
PURIFYING AIR AT THE SPEED OF LIGHT™

Sanuvox Technologies Inc.
146 Barr.
St-Laurent, Qc.,
H4T 1Y4

p. 1.888.726.8869
f. 1.888.582.6475
e. info@sanuvox.com

TECHNICAL SPECS: S300 MED2

PORTABLE UV AIR PURIFIER & FILTER

Description

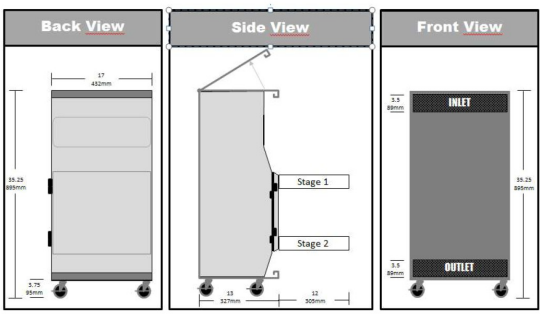
The S3000 MED2 is a portable ultraviolet air purifier with filters. The S300 G MED2 is designed to filter and purify harmful pollutants and biological contaminants.

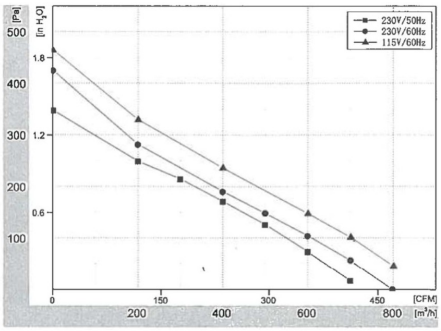
MOTOR:

- Purifier fan motor: direct drive centrifugal fan with backward curved blades: unit can be positioned upright or sideway
- Motor only: 115 volts, 1.25 amps, 230 volts, .62 AMP backward impeller - 115 V (part MSCMTR11), 230V (part MSCMTR7)
- 300 cfm (no load)

UNIT:

- Painted aluminum casing, 56 lbs (25 KG)
- Dimension:17"w x 13" d x 35.25"h (43.2cm X 32.7cm X 89.5 cm)
- Whole unit consumption: 120v- 2.25a, 230v 1.18a, 270 watts
- One intake and one exhaust 3.5" x 16" (89mm x 406mm)
- One access door for the motor and the filters; one for the lamp assembly; one hinged door on top for cleaning intake.
- Sturdy rubber casters (4) with brakes.
- Plunger switch on door access. One 6 ft - 3 prong computer cord
- Two speed – 200 & 300 cfm- manual toggle switch
- Aluminum reflector for the UV lamp with access to change lamp
- Filter section (pre filter and HEPA): 12"x 16" (305mm x 407 mm)
- Whole unit insulated: 59db at 5ft , ducted 54db at 5 ft
- Certification: cQPSus





Standard equipment

- 1 x 10.5 inches J Lamp (part LMPHGJ105) with 18 inches UV-C (germicidal)
- 1 x 2 inches pleated pre-filter (part MSCFTR10), 1 x 2.5 inches HEPA 99,97% (part MSCFTR11) effective with particles down to 0.3 microns
- 1 x ballast with LED , 110/220V (part BST120/277GL)
- **Warranty:** ballast-3 years, motor-3 years, lamp-2 years (commercial)

Specifications

Wheeled 300CFM unit in a light chassis for air treatment; combines high efficiency filter with high UV efficiency treatment: the lamp is parallel to the airflow and encase in a reflective aluminum case for better efficiency. UV lamp will provide high output germicidal UVC.

OPTION

- **For clean rooms, hospital, computer rooms:**
  S300 CRO For white room, hospital, computer room

Figure 8: Courtesy of Sanuvox

Figure 9: Courtesy of Austin Air Systems

SIMULATION

A simulation of a 6000 square foot dental clinic/office space in Phoenix Arizona is the focus. A drawing of the layout of the clinic was created and rooms were designated as

treatment rooms, office space, hallway and sterilization. Once the layout was created the height of the ceiling was selected and then materials for the walls and the resistance of the insulation for heat transfer to determine the losses for cooling loads. Climate data from ASHRAE 2017 Fundamentals as the basis for determining cooling loads using the Radiant Time Series (RTS) method. RTS Calculates the solar intensities for each hour for every exterior surface. Each heat gain is split into radiant and convective portions. The infiltration heat gains and the sum of the convective portion is added to the radiant heat gains to determine the hourly cooling loads. The highest hourly cooling load is what will determine the capacity for the Air Conditioner. An overview of the RTS method is shown below (Fig. 10). From the figure it is determined that RTS is quite a complicated procedure and it is most practical to provide the results. The simulation yielded an air conditioner of 25 tons and 5000 CFM with a desired 12 ACH.

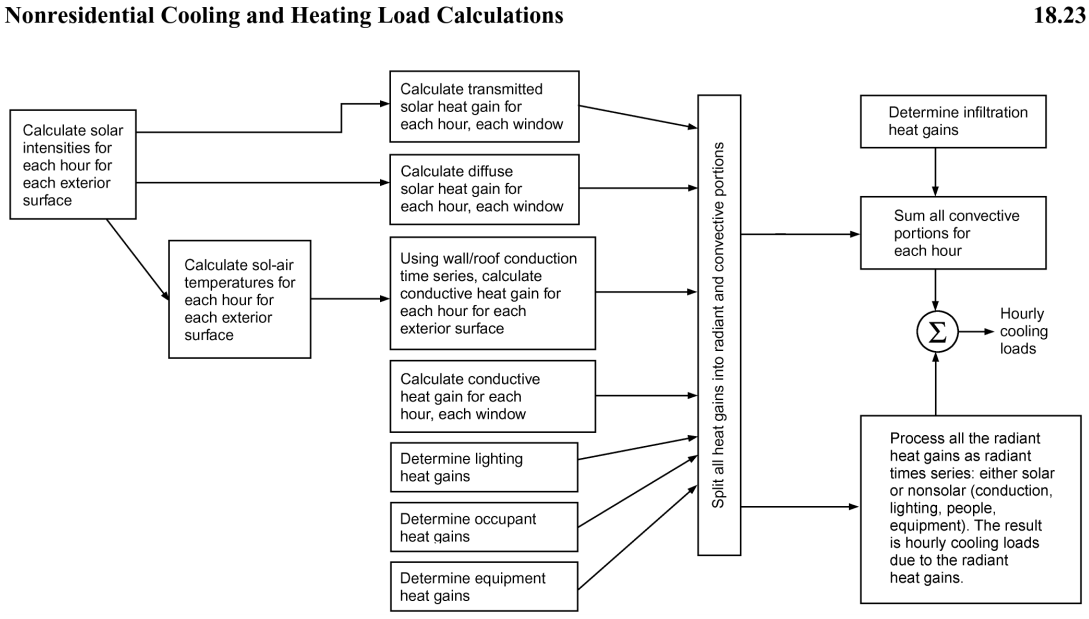


Figure 10: RTS OVERVIEW - Courtesy of ASHRAE

FUNCTIONAL COMPARISON

Table 1 will show the comparison of relevant features and a discussion of the various advantages and disadvantages will follow. The fixed system's main advantages is that there is no physical encumbrances added to the work space. The filtration and purification is conducted without any noticeable changes to to the work area. An additional benefit is the effect that a germicidal UV light will have on coil efficiency. The UV will eliminate biofilm fouling on the cooling coils for a cost effective benefit. The portable units do not provide this overall protection. The actual CFM of the units will also have some impact on the cost effectiveness of the units, however, that is beyond the scope of this study.

IMPORTANCE OF THE MIXING FACTOR

Since the mixing factor is a multiplier on the chart shown in fig. 3, it can change the times by up to 10 times. This is a critical piece of information to know when implementing the guidelines. This is not an issue for a competent engineer or technologist. The problem arises when these guidelines are in the hands of small business owners who are desperate to get their businesses going after the round of lockdowns in 2020. A person was most likely to go with the cheapest option, a Heating, Ventilation, and Air Conditioning ("HVAC") technician or plumber. While they are competent and necessary in their fields of expertise, they are not trained in engineering sciences and incompetent for the purposes of making engineering decisions. While mixing factor is not the only method of calculating air mixing, the principle behind it remains the same. Air does have an efficiency in which it mixes and it must be known.

	S300		Heathmate	OptiClean	Blue-Tube XL and Merv 13 filter	
Type	Portable		Portable	Portable	Fixed	
Min CFM	200		75	600	HVAC system	
Max CFM	300		400	1500	HVAC system	
Actual CFM	-		250	-	HVAC system	
intake side	front		all	front	floor	
Exhaust	front		side	outdoors	outdoors	
Variable speed	yes		yes	yes	HVAC system	
number of speeds	2		3	3	HVAC system	
Merv 13 filter	no		no	no	Yes	
pre filter	yes		no	yes	yes	
Hepa Filter	yes		yes	yes	No	
Germicidal UV	yes		no	no	yes	
filter	yes		no	yes	yes	
Reusable filter	no		yes	no	No	
Hepa filter change time	2-3 months		5 years	40,000hrs	-	
Filter replacement indicator	no		no	yes	No	
Installation cost	no		no	yes	yes	
Warranty	yes		yes	yes	yes	
warranty length	ballast	3	5 years parts an labour	1 year limited	lifetime	
	motor	3			lamps	2years
	lamp	2			filter	-
surface disinfection	no		no	no	yes	
coil disinfection	no		no	no	yes	
improve coil efficiency	no		no	no	yes	
Height	35.25		47	49.75	Na	
Width	17		14.5	17.625	Na	
depth	13		14.5	22.0625	Na	
Weigth (lb)	56		23	125	-	
Power rating (Amps)	1.25		1.3	5	-	
(Volts)	230		120	115	-	
max power consumption	-		132	-	-	
UV power consumption	110	220	NA	NA	110	277
Noise (db)	Ducted	54	65	-	na	
	insulated	59	NA	-	na	

Table 1: Comparison of Air Purification Technologies

BRIEF OVERVIEW OF AN HVAC SYSTEM

This next section will give a brief overview of an HVAC system. The Air conditioning system is very complex and for the purposes of this study be represented in a simplistic manner to focus on the areas of need. A representation of a roof top unit can be seen in figure 11. It consists of a condenser, compressor, the condenser fan, fan motor fan belt,

evaporator supply air and return air. Controls are an integral part of the HVAC system and can greatly increase efficiency. The air conditioner is an essential system to provide quality air to the occupants inside of a building. Poor quality air has been linked to decreased health from sick building syndrome to transmission of SARS-Cov-2. The HVAC system is an integral part of the process in a dental clinic setting, that is not traditionally looked at as part of the process.

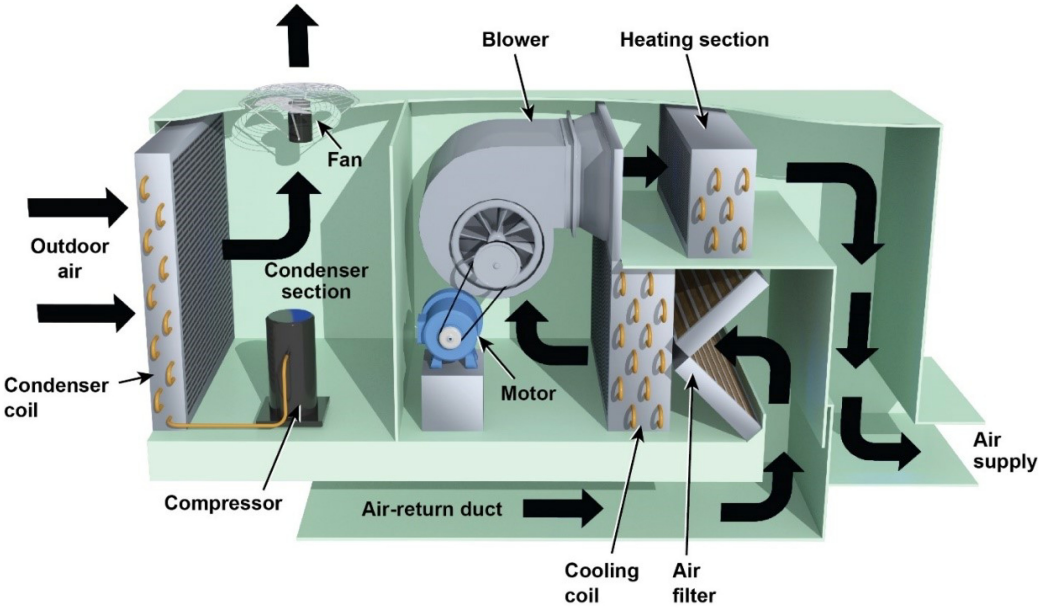


Figure 11: Rooftop HVAC System (Courtesy of PNNL)

AGMP REGULATIONS AND HVAC OPERATIONS

When considering the transmission of SARS-CoV-2 and the HVAC system's role in providing infection control, maintenance procedures in this area become a higher priority. This priority is increased when a more dangerous contagion such as Monkeypox could potentially be spread through aerosols. This aspect will further be discussed in the section on risk. In the context of maintenance management, it is focused on doing

maintenance on machinery or equipment to produce goods. However, this focus is a limited in scope. When examining maintenance from an operations management perspective, there are both service and manufacturing processes. A process is defined as "Any activity or group of activities that takes one or more inputs, transforms them, and provides one or more outputs for its customers." (Krajewski, Malhotra & Ritzman, 2019) A process will have inputs, processes and operations and outputs that goes to either internal or external customers (see fig 12). In a service process the business is providing a service rather than creating a product. There is equipment involved in providing services. Dental clinics have a wide variety of equipment used to perform their services. One system not traditionally as equipment is the HVAC system. With the attention given to SARS-Cov-2 transmission through aerosols, it has brought an integral system often overlooked to the minds of many business owners.

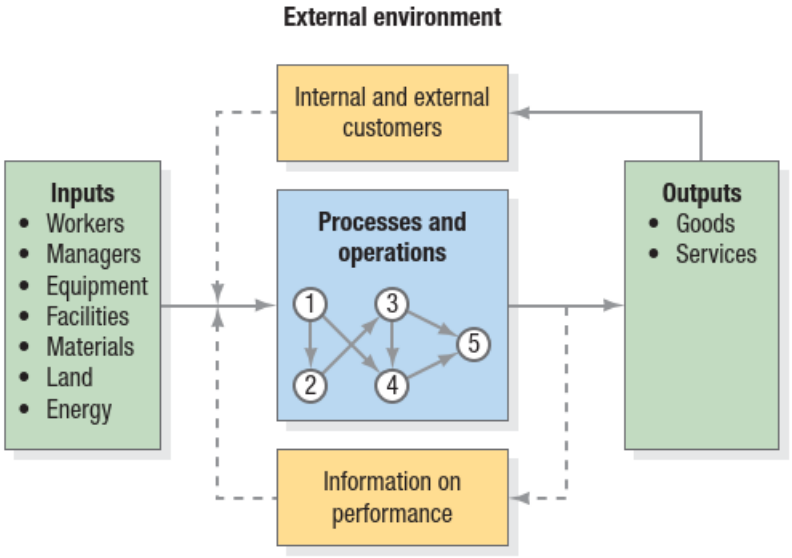


Figure 12: Operations (Courtesy of Pearson)

With the understanding of the importance of an HVAC system to the functioning of a process in a dental clinic during this SARS-Cov-2, the risks of failure to this system

becomes an increased area of concern. “Aerosolised viral particles may be potentially more dangerous than bacteria as they can remain airborne for longer periods of times, given the lower particle size, and the lower settling speed” (Gandolfi, Zamparini, Spinelli, Sambri, & Prati, 2020). Considering this information, an HVAC system must be considered as part of the risk assessment as it is incorporated as part of the pandemic mitigation system. It provides part of the Air exchanges (ACH) Per hour required by recommendations given by the Center for Disease Control (“CDC”) and used by a large number of provincial and state health authorities. (see fig. 2) This document is markedly different from the information put out by the CDC in 1994 in their Guidelines for Preventing the Transmission of Mycobacterium tuberculosis in Health-Care Facilities, 1994 (see Fig. 3). When examining the discrepancy between the chart revised in Guidelines for Environmental Infection Control in Health-Care Facilities (2003) and the previous chart in 1994 one must answer the question as to why there is a discrepancy.

The 1994 chart shown in fig. 3 was reproduced from a section named “Supplement 3: Engineering Controls”. This section is directed at persons with engineering backgrounds. The quoted information removed from the 1994 chart in the 2003 update is as follows: “The times given assume perfect mixing of the air within the space (i.e., mixing factor = 1). However, perfect mixing usually does not occur, and the mixing factor could be as high as 10 if air distribution is very poor (98). The required time is derived by multiplying the appropriate time from the table by the mixing factor that has been determined for the booth or room. The factor and required time should be included in the operating instructions provided by the manufacturer of the booth or enclosure, and these instructions should be followed.” ("Guidelines for Preventing the Transmission of

Mycobacterium tuberculosis in Health-Care Facilities, 1994) The information missing provides a problem to the target of the recommendation for an incompetent person viewing this chart. (See Fig. 1)

A previous study demonstrated by the author demonstrated that there was a lack of proper representation of AGMP guidelines, and in some cases no guidelines (Richardson, 2021a). From this guideline placed forth by the Saskatchewan Health Authority ("SHA"), it is impossible for an unqualified person to determine the need for understanding the mixing factor. A document placed forth by JL Engineering addresses this short coming. "A study done by the US Environmental Protection Agency on In-Room Air Cleaners (2) shows that for a room with a 2:1:1 (L:W:H) aspect ratio with central furniture and an air cleaner in a corner at an angle, the mixing efficiency or air change effectiveness (ACE) can be as low as 44%. This means that the amount of air obtained from the above table Room Air Changes Rate would have to be multiplied by a factor greater than 2.25." (Lopez, 2020) Without knowing this critical information, it would be impossible to conduct a proper risk assessment, and it could possibly mean that there is continual state of "failure in relation to required performance standards;" (Narayan, 2012) that is unknown to the clinic. The research on operational risk management for dental clinics in the COVID-19 settings are scant. A study examined by the researcher mentioned a number of areas in risk including financial impact. Lockdown in COVID 19, Dental Practice post COVID-19, Hygiene and Patient management. (Wajeeh et al., 2021) This study made no mention of the operation of the HVAC system in relation to infection control and how a properly functioning HVAC system would reduce costs, and provide infection controls at the same time. A study suggests that there is financial benefit to

maintenance and proper infection controls that could provide lower costs and reduce risks in a dental clinic setting. (Richardson, 2021b)

FINANCIAL ASSESSMENT

SIMULATED COMPARISON OF COST

A graphical representation of the cost of operation is presented in the following table 2. It contrasts the cost of installation, the price of the units and the cost of operation for the first year of use.

From the initial assessment it is determined that the Austin HealthMate HM450 is the lowest initial cost at $6,803.53 followed by the Blue-Tube XL with the Merv-13 filters at $8,757.95. Next is the OptiClean system at a significant price increase at $18, 612.72 and the most expensive system is the S-300 that is $20,190.83. These preliminary results favour the Austin unit, however the next analysis will examine the cost savings due to the efficiency increases that will result from the installation of the Blue-Tube XL UVGI with Merv-13 filters.

COST BENEFIT ANALYSIS

Various levels of increased efficiencies using present values for cost savings and improved lifespan have have been tabulated in a chart. The analysis will examine a 5%, 10%, 20%, 30% and a 37% increase in efficiency over a 20 year period. The second aspect of the analysis examines a present value resulting from improved lifespan of 25, 50, 75, 100% improved lifespan of the system. The actual system life is estimated to be 10 years with a system life determined to be 20.

	S300		Heathmate	OptiClean	Blue-Tube XL and Merv 13 filter		
Type	Portable		Portable	Portable	Fixed		
Cost	$2,500.00		$929.00	$2,530.00	$2,779.65	$1,544.91	$7.08
Diffuser Cost				$320.00			
No of UV units					2.00		
Installationt cost					720		
Filter change interval (years)	0.25	2---5	3	0.25			0.25
Life span	5		5	5	18,000	18,000	
					lights		Filters
Number of Units Required	6		6	6	2	8	6
Filter (USD) replacement cost	$190.00		$450.00	$443.00	$16.51		
Pre filter USD	$55.00		na	$5.88	na		
Carbon Pre filter (USD)	80		-	-	na		
UV light replacement cost (USD)	$200.00		-	-	$288.40	$223.30	
Lifespan (yrs)	2			-	2		
warranty	2			-	2		
Lights per unit	1						
Voltage	115			115			
Amps	5			5			
Power (watts)	460		135	460	130	80	
HOP	12		12	12	12		
Days per week	6		6	6	6		
Weeks per year	52		52	52	52		
Cost of Power	$0.1087		$0.1087	$0.1087	$0.1087		
yearly cost of power	$1,122.83		$329.53	$1,122.83	$366.14		
Yearly filter replacement	$3,468.00		$900.00	$389.89	$396.24		
Yearly UV light expense	600				$1,181.60		
Subtotals	$5,190.83		$1,229.53	$1,512.72	$1,943.98		
Initial cost	$15,000.00		$5,574.00	$17,100.00	$6,631.97		
First year cost	$20,190.83		$6,803.53	$18,612.72	$8,575.95		

Table 2: First Year Cost Comparision

A simplified sensitivity analysis of the cost of reactive maintenance for a 6000 sq ft building will be represented with an assumption that reactive maintenance is the norm. The present value of the energy cost at 2% interest over 20 years at 5, 10, 20, 30 and 37%

inefficiency is compared to a perfectly maintained system. The 7% interest rate is used in the analysis based on the assumption of the system being financed.

Variable		Value
Optimal Energy Total Annually	$	15,974
Energy PV Cost (20 years)	$	181,073
Design and Construction Cost	$	188,000
Rate of Interest		0.07
Actual System Life (years)		10
Rated System Life (years)		20
Estimated PV Cost (20 years)	$	154,243

Cost Savings from Improving Efficiency and Lifespan		
Recapture Efficiency		PV Cost Savings (20 years)
5%	$ 799	$ 9,054
10%	$ 1,597	$ 18,107
20%	$ 3,195	$ 36,215
30%	$ 4,792	$ 54,322
37%	$ 5,910	$ 66,997
Improved Lifespan		PV Cost Savings (20 years)
25%	13 yrs	$ 53,449
50%	15 yrs	$ 72,525
75%	18 yrs	$ 92,771
100%	20 yrs	$ 102,260

Table 3: Cost Savings from Effective O&M

DISCUSSION OF ANALYSIS

The 37% recapture from improving efficiency and lifespan yielded a significant financial benefit. The recapture of energy resulted in a $66,997 present value (PV) cost savings. Present value is how much money is required now to cover a future expense. This suggests that there is financial benefit to taking this course of action. The best case PV savings for improved lifespan is $102,260. The sensitivity of cost incurred from reactive maintenance yielded a PV penalty of 92,008 at 7% interest rate. A sensitivity analysis of

the financial penalty of a lifespan reduced by 50% resulting from reactive maintenance At 7% interest rate yielded loss of $107,918. When considering the various levels of the penalties for the loss of efficiency, it suggests that the Blue-Tube XL with the Merv-13 filters appears to out perform in this area. Based on the cost savings from improved efficiency.

Sensitivity Analysis of Annual Costs			Present Value of Energy Cost at 7% Interest over 20 Years	
Lost Efficiency	Energy Cost	Penalty	Present Value	Cost Penalty of Inefficiency
0%	$5,325	$0	$248,671	$0
5%	$5,591	$266	$261,104	$12,434
10%	$5,857	$532	$273,538	$24,867
20%	$6,390	$1,065	$298,405	$49,734
30%	$6,922	$1,597	$323,272	$74,601
37%	$7,295	$1,970	$340,679	$92,008
Sensitivity Analysis of Lifespan			**Net Present Value at 7% Interest over 20 Years Prorated to 40 Years**	
Lost Lifespan	Lifespan	Lost Years	Net Present Value	
0%	20	0	$48,583	$0
25%	16	4	$72,311	$23,728
50%	13	7	$101,346	$52,763
75%	11	9	$134,564	$85,981
100%	10	10	$156,501	$107,918

Table 4: Sensitivity Analysis of Costs Incurred from Reactive Maintenance

RISK

The issue at hand is the area that is targeted. Small business would be the area most affected as many factors affect the decision making process with respect to risk management. One aspect is the areas in Canada that are using negligent guidelines that give the incompetent reader any idea that the there is a need to determine what room mixing is. Vancouver Coastal Health (VCH) dismisses the mixing factor by stating “The table below [Table S-31] was adapted from a 1973 NIOSH article where a mathematical formula was devised for clearance of particles in enclosed spaces. It has been used since then as a guideline for room clearance with no updates. As such, it is a general guideline

only particularly as air handling systems have become more sophisticated since the formula on which this table was predicated was developed." (Vancouver Coastal Health, 2021) The issue with this guideline is that it doesn't inform you that mixing efficiency is a factor. The fact that air mixes doesn't change even if the mathematical formula changes. The physical properties of air and how it flows as a fluid does not. The design of a flow system is complicated and requires special techniques for its design. "Special techniques for the design of flow systems carrying gases, such as air, have been developed by professionals based on years of experience. The detailed analysis of the phenomena involved requires knowledge of thermodynamics." (Mott & Untener, 2015, p. 451). When taking into account the understanding of engineering required to determine the implementation of any measures to meet guidelines, it is unreasonable to assume that a dentist or a dental clinic manager could understand what is needed to make an intelligent decision on implementing the guidelines. Air Change Efficiency (ACE) and Contaminant Removal effectiveness (CRE) are measures use to quantify ventilation quality. "When we want to quantify the ability of a system to renew the air of a room, we can use the air change efficiency. This index is especially recommended when neither the location of the contamination source is known nor the type of contaminant, which is what usually happens at the design stage if the type of use to which the room is to be put is unknown" (Villafruela, Castro, San José, & Saint-Martin, 2013). From the same article it states the following about the CRE: "The contaminant removal effectiveness index, is used to quantify the quality of a ventilation system when the position and nature of the contaminant are known" (Villafruela, Castro, San José, & Saint-Martin, 2013). There are some calculations that are involved with determining what the values are for either the

CRE or the ACE and computational fluid dynamics to evaluate the system and mixing in the room. This type of assessment is beyond the capability of a dental professional or an office manager or a technician.

The American Society of Heating Refrigeration and Airconditioning Engineers ("ASHRAE") covers risk assessment in its design manual for hospitals and clinics. "Each piece of equipment in a health care setting must be assessed for level of risk. It is up to the facility to determine the risk that it is willing to assume. For each piece of equipment regardless of size or service, a risk assessment is utilized to minimize equipment failures, extend service life, and ensure safe and efficient operation for the implementation of planned preventive maintenance. Most computerized maintenance management systems (CMMSs) include a prescribed methodology for assessing equipment. One such formula is

Total = E + A + [(P + F + U)/3]

i. Risk Category A: clinical application; lists the potential patient or equipment risk during use
ii. Risk Category E: equipment service function; includes various areas in which therapeutic, diagnostic, analytical, and miscellaneous equipment are found
iii. Risk Category F: likelihood of failure; documents the anticipated mean-time-between-failure rate, based upon equipment service and incident history
iv. Risk Category P: manufacturer's recommended maintenance; describes the level and frequency of preventive maintenance required
v. Risk Category U: the environment of use; lists the primary equipment use area" (Koenigshofer et al., 2013)

With this situation it has the risk of creating a disaster because of the factors that are introduced into the a number of systems unknown to the business owners. When the Author discovered the missing information in the SHA guidance during the course of his

work he alerted them to it. This was met with silence and a refusal to provide information. There was an initial report written under the duress of persecution and torture. Finally when the SHA refused to deal with negligent guidelines, the Author went to the Battlefords Royal Canadian Mounted Police in North Battleford, Saskatchewan on July 3, 2020 for a criminal investigation. Two criminal negligence complaints were made in addition to a torture complaint. On July 7, 2020 a torture complaint was made for his infant daughter Karis Kenna Nicole Richardson. Rather than prosecute the SHA the Royal Canadian Mounted Police tortured the Author and his daughters. The Author has gone all the way up to the Supreme Court of Canada, who has sanctioned crimes against humanity, genocide, torture, terrorism, treason and a number of other heinous crimes. The CDC is the originator of the misrepresentation of the AGMP guidance. The greatest obligation falls on the CDC and it is the responsibility of the Director ROCHELLE WALENSKY to ensure that the CDC is issuing correct information during a pandemic.

When examining the lack of representation of the mixing factor or any idea of air mixing in any capacity, it is impossible for a risk assessment to be done when a person presented with this information is incompetent in HVAC engineering. The group most likely not to consult an engineer or technologist with respect to these matters is a small business. The group that is the most probable to be affected by this misrepresentation is the small business. It would be impossible to calculate when an unknown is introduced into the system. The author during the course of his work been made aware of a technician making a decision on the HVAC infection controls that he is incompetent in. This would increase the likelihood of failure in a system. (See Appendix A)

The worst case scenario with the deliberate mixing factor issue is that the unknowns present in an unknown number of systems could allow for the delivery of a biological weapon to attack a sovereign nation by making the attack look like a random outbreak or superspreader. In this worst case scenario a large portion of small businesses that fall under the AGMP guidance have failures in their systems unknown to them. This provides an opportunity for a biological attack against a country, city or any region that could be masked as an outbreak. Any viral agent that could travel in aerosols could be introduced into a system to infect persons in what would appear to be a random outbreak. When this worst case scenario is accounted for it is imperative that the risk be addressed and the guidelines provided with clear instruction. With the torture, persecution and severe attacks the author has faced in reporting this issue with the mixing factor, it is quite possible that this misrepresentation was deliberate to deliver a biological agent as an attack against a country masked as an outbreak of a contagion.

A DISCUSSION ON AEROSOLS

Aerosols are a mode of transmission associated with viral transmission, including SARS-Cov-2 and the emerging Monkeypox contagion. Since aerosols are routes of/and/or potential routes of transmission of these relevant contagions, a discussion on aerosols and transmissions via aerosols is warranted.

A study suggests that aerosols ejected from an infected person can stay in the air for hours from the following quote; “aerosol particles that contain the virus and are ejected by the infected person may remain active for more than 3 h in a suspended condition in air” (Pei, Rim, & Taylor, 2021). Another study has demonstrated that poorly ventilated

environments are where people contract SARS-Cov-2, and that optimum air quality is required to eradicate its spread (Navaratnam et al., 2022).

HAZARD IDENTIFICATION

The hazard identification comes in two areas for the purpose of the paper, the environment and processes. The purpose of this hazard identification is to give a brief overview. It is clear that people, materials and equipment are potential hazards, for the purpose of the clinic for the study it is assumed that the former are not an issue. An in depth analysis is beyond the scope of this study. SARS-Cov-2, the potential Monkeypox threat, aerosols, the ventilation systems and defective equipment are environmental hazards in the dental clinic setting applicable to the AGMP guidance. Processes are also a factor for hazards as well. The work performed in each treatment room is a process. Each treatment room in the dental clinic is equipped to do multiple tasks in the same space. Every treatment is a process and the people, the equipment and the Heating, Ventilation and Air Conditioning ("HVAC") is a part of this process. The process hazards of major concern are the patients are potential candidates for SARS-Cov-2 infection and aerosols generated from the dental procedures are a mode of transmission.

There are four main stakeholders in Saskatchewan affected by the assessment of the risk of SARS-Cov-2 in a dental clinic setting, the public health authority (the SHA, also to a lesser extent the CDSS), the Association of Professional Engineers and Geoscientists ("APEGS"), the dental clinic and the public. These stakeholders are identified based on the manner in which the documentation issued by the CDSS and subsequent conversation with the CDSS that advised the author that it was the responsibility of the

SHA for the guidance. The public is always a stakeholder in anything that affects them. The SHA has considerable resources and engineering personnel under its employ. Between the SHA and APEGS falls the greatest responsibility for hazard identification with respect to health and engineering related areas. These stakeholders can in principle be applied to any jurisdiction by substituting the equivalent federal or provincial authorities.

PROBLEMS WITH THE GUIDELINES

From a comparison between the documentation provided by the SHA and the 1994 version of Table S-31 issued by the CDC an obvious hazard becomes apparent. The mixing factor is defined in the 1994 documentation and none of the later documentation identified it in this study. The omitted information lets the reader know that times on the table are based on perfect mixing, however perfect mixing does not usually occur, and that the times on the table could be multiplied by up to 10. This information being omitted is an extreme hazard as the consequence of failure is potentially death. Vancouver Coastal Health (VCH) infection prevention and control uses a similar AGMP guidance document and goes on to state: “The table below was adapted from a 1973 NIOSH article where a mathematical formula was devised for clearance of particles in enclosed spaces. It has been used since then as a guideline for room clearance with no updates. As such, it is a general guideline only particularly as air handling systems have become more sophisticated since the formula on which this table was predicated was developed” (Vancouver Coastal Health, 2020).

The mathematical formula may have changed, however, the physical properties of air does not, nor does the understanding of thermodynamics that is required to make an intelligent decision on the AGMP guidance document. APEGS would understand that "Stratified ventilation can trap infectious aerosols in inversion layers and increase risk" (Bahnfleth, 2022) under certain conditions. Another unidentified hazard is no clear directions for a dental clinic to get advice from a qualified engineer or technologist. Instead the term HVAC professional is used. What does that mean? It is unclear and that could include HVAC technicians who are unqualified to make decisions about implementing the AGMP guidelines.

IMPACT OF STRESS

The SARS-Cov-2 lockdowns created extreme financial duress on small business owners. "According to CFIB, the average cost of COVID-19 for Saskatchewan businesses surveyed is $156,000" (Lynn, 2020). Given the state of panic and the stress that was placed on the population from the threat of a new pandemic and the financial lockdowns resulting from it, it is unreasonable to expect a dental clinic owner to make an intelligent decision on these guidelines under extreme stress. "Fear is inherent in the COVID-19 characteristics and is not completely manageable, especially with generic calls to dominate fear, and an excess of public concern around the difficult management of such a complex problem cannot be avoided" (Cori, Bianchi, Cadum, & Anthonj, 2020). With the emergence of a contagion (Monkeypox) that could potentially have a case fatality rate as high as 33% and affecting children at a greater rate than adults (Bernard & Anderson, 2006), the potential for an exponential increase stress is high. Stress is a hazard as well, and this should have

been identified in risk assessment performed by the SHA with registered members of APEGS. A pandemic response is essentially a project and all projects have a risk management strategy based on operations management. “A major responsibility of the project manager at the start of a project is to develop a risk-management plan, which identifies the key risks to a project’s success and prescribes ways to circumvent them. A good risk-management plan will quantify the risks, predict their impact on the project, and provide contingency plans.

Project risk can be assessed by examining four categories:” (Krajewski & Malhotra, 2021, p. 259) the category of most importance from the perspective of the SHA is project team capability and operations. The SHA, APEGS, CDSS, and the dental clinics are part of the same team with respect to the occupational health and safety in this matter. The information was not disseminated in a manner that is consistent with making the clinics aware of the need for an engineer/technologist professional to implement the guidance. The communications aspect should have been identified in the operations management risk assessment. Pamela Heinrichs is a Manager for the Risk Management division of the SHA. She and the rest of the management are responsible for the Risk Management division of the SHA not identifying and mitigating this risk.

POOR INDOOR AIR QUALITY

Poor Indoor air Quality can need to a number of adverse health effects as this quote from a study suggests. “Furthermore, particulate matter, such as mold, asbestos, and silica dust, can also pollute the indoor air.... These indoor air pollutants result in a poor IEQ and induce health effects, such as asthma, throat pain, shortness of breath, and heart diseases .... Cancer, chronic lung diseases, and bronchitis are also some serious conditions

caused by poor indoor air quality" (Navaratnam et al., 2022). This same study has suggested that the following mental and behavioural problems are linked to poor air quality: "Moreover, these indoor air pollutants are often linked to mental conditions, such as increased negative feelings, intensified violent behaviors, degraded concentration, and mental exhaustion" (Navaratnam et al., 2022).

DISASTER POTENTIAL

The hazards that were not identified and further ignored were not addressed by the dental clinics. With the dental clinics being given information to make decisions with unidentified hazards outside of their competency, it is not possible for them to make informed decisions. From a maintenance management perspective these factors can contribute to disaster. "lack of or poor management systems, poor communications, inadequate procedures, poor maintenance, inadequate training, time pressure on work force" (V Narayan, 2012, p. 157). The risk analysis process on the dental clinic end cannot be effectively done. The body that they are relying on to calculate the risk that they are unable to do has not done a reasonable risk assessment. "The two main pillars of risk analysis are probability and consequences. Probability refers to the chance or likelihood that an event will happen and will result in harm or loss" (E Kevin Kelloway, Francis, Gatien, & Montgomery, 2019, pp. 88–89).It is impossible for the dental clinics to assess a risk that they are unaware of. The hierarchy of risk control is elimination, substitution, engineering, administrative and personal protective equipment. Since elimination and substitution were not viable alternatives the next step in mitigation was engineering. This step was effectively missed.

The potential for disaster is unknown. While a quantitative risk evaluation cannot be conducted with an unknown risk factor in the system, some areas of concern can be identified. A number of relevant areas of concern has been gleaned from Narayan. They are as follows, lack of or poor management systems, poor communications, inadequate procedures, poor maintenance, inadequate training, time pressure on work force (Narayan, 2012).

The following is a lengthy quote from describing the Columbia Space Shuttle disaster.

“On January 28, 1986, the Challenger space shuttle took off, but exploded seconds later, killing all seven astronauts. A Presidential Commission of Inquiry investigated the incident, under the chairmanship of the Secretary of State, William Rogers. Nobel Laureate Richard P. Feynman, a well-known Professor of Physics at the California Institute of Technology at Pasadena, was a member of the commission. In his book1, Feynman explains the progress and outcome of the inquiry. The direct cause of the incident was the loss of resilience of the O-rings in the field joints between the booster rocket stages. However, this was not the first time that hot gas had leaked past these joints. Morton Thiokol Co., which had designed the seal, had analyzed its performance during every previous launch. In one of their studies, they had correlated the seal failures with the ambient temperature at the time of launch. They had a theory as to why the blow-by or leak occurred.

The low ambient temperatures resulted in loss of resilience of the seal, and this could explain the incidents. On the night before the disaster, they warned NASA not to fly if the ambient temperature was less than 53°F. NASA was under tremendous political and media pressure not to delay the launch, and the negotiations between them and Morton

Thiokol carried on late into the night. The managers of Morton Thiokol and NASA decided to proceed with the launch, in spite of scientific advice to the contrary. Feynman concluded that there was a failure in management in NASA. Had their controls been effective, they would have learned from previous near-misses.

On February 1, 2003, the shuttle Columbia disintegrated during re-entry. During the launch, a block of foam insulation on the external (propellant) tank dislodged and hit the left wing. This was known within a day after the launch, but NASA decided that it was not a serious threat to flight safety.

The following description is based on the report of the Columbia Accident Investigation Board2 (CAIB). The physical cause of the loss of Columbia and its crew was damage to the heat shield protecting the left wing. A piece of insulating foam separated from a part of the external fuel tank and struck the wing, very shortly after launch. The result was a large hole in the heat shield. During re-entry, this allowed superheated air to penetrate the wing and destroy the structure, resulting in loss of control, failure of the wing, and breakup of the shuttle.

Foam loss was not a new phenomenon. Photos taken at launch indicated that it happened in 80% of the missions for which photos were available. With each successful landing, NASA engineers and managers seemed to regard foam-shedding as inevitable, and unlikely to jeopardize safety. Hence, it became an acceptable risk.

Foam strikes were assessed for potential flight safety issues by a dedicated team. Despite their repeated efforts to obtain additional photographic evidence of the damage to the wing, managers in the Shuttle Program denied the team's requests. The CAIB report

records eight 'missed opportunities,' including three requests for additional photographs that may have helped turn the course of events.

The CAIB asked NASA to investigate whether the crew could have been rescued if the decisions from the second day onward of the launch had been different. NASA considered both the in flight repair and rescue options (by using Atlantis as a rescue craft; it was already being prepared for launch later). NASA reported that both were feasible, but rated that the rescue option was more likely to succeed.

The CAIB concludes that the Columbia accident is an unfortunate illustration of how NASA's strong cultural bias and its (over) optimistic organizational thinking undermined effective decision-making. Over the course of 22 years, foam strikes were normalized to the point where they were simply a "maintenance" issue—not one that could affect safety of the mission.

In the case of the Challenger disaster, the Rogers Commission found that NASA had missed warning signs of the impending accident. It noted the risks posed by schedule pressure, including the compression of training schedules, a shortage of spare parts, and the focusing of resources on near-term problems. By the eve of the Columbia accident, the same institutional practices existed as before the Challenger accident. The CAIB noted that while organizational changes recommended by the Rogers Commission were made, NASA's approach to safety remained optimistic" (Narayan, 2012).

From the examination of the Columbia disaster that disintegrated a space shuttle, and the following challenger disaster a parallel can be drawn and compared to the current situation. The SHA was notified of the issue with the misrepresentation of the mixing

factor on the Aerosol Generating Medical Procedure ("AGMP") guidance document. Repeated attempts to notify the SHA of the issue were met with silence. Professional advice backed by a professional engineer with extensive knowledge in the field was ignored with no professional advice to the contrary (DSR Karis Consulting Inc., 2020). This deliberate ignoring of the issue with the mixing factor and the potential problems that it will could create in the proper maintenance of the system could have catastrophic effects. "A good management system could have ensured the right level and quality of communication, the required safety features in the design, competence and motivation of the staff, and the procedures that they should apply. One or more or these links have failed in each of the disasters" (Narayan, 2012).

This failure is further compounded from the freedom of information request made by Dale J. Richardson to the Saskatchewan Ministry of Health that confirms that there is no engineering report, supporting technical information or any risk assessment regarding the implementation of the AGMP guidelines. This is further compounded by the fact that the change in the guidelines were issued in 2003, and there should have been some scientific information to justify the use of the representation of the AGMP guidance issued by the SHA. (See Appendix B)

Pamela Heinrichs who is a Manager of Risk Management for the Saskatchewan Health Authority and has sworn in an affidavit in T-1404-20 in the Federal Court of Canada (See Appendix C). Pamela Heinrichs has stated that she is responsible for instructing counsel for the Saskatchewan Health Authority for the purposes of the defence of the action (T-1404-20) brought by Dale J. Richardson against the SHA. Pamela Heinrichs begins to swear in a false narrative to state that Dale J. Richardson, DSR Karis

Consulting Inc. (“DSR Karis”), and Robert A. Cannon as vexatious litigants. Pamela Heinrichs claims that DSR Karis and Robert A. Cannon are “agents” of Dale J. Richardson. As Exhibits in the documentation provided by Pamela Heinrichs were solely focused on a Habeas Corpus purpotedly filed by Robert A. Cannon after the officers of DSR Karis were attempting to enter the Court of Queen's Bench for Saskatchewan in Battleford Saskatchewan on July 23, 2020 and were arrested by the RCMP and taken to SHA facilities and subsequently tortured.

Pamela Heinrichs failed to mention that the SHA had no defence for the criminal negligence. Pamela Heinrichs has an obligation to the public to act in the interests of the people of Saskatchewan in assessing risk. It is impossible to defend a position that is not based on science. According to the Saskatchewan Ministry of Health, there is no basis for the use of the AGMP guidelines, and there is no risk management or justification for her position in T-1404-20. Pamela Heinrichs has taken deliberate actions to hinder proper implementation of guidelines that will have a disasterous effect when a serious contagion is starting to spread. It has been observed that Monkeypox is a potential contagion that could have an extremely deleterious negative impact on the population of Saskatchewan.

BIOTERRORISM

The Canadian Security Intelligence Service has released some declassified documents relating to Bioterrorism. Selected quotes relating to chemical and biological (CB) agents that are relevant to this discussion as follows:

“The number of different types of CB agents that potentially could be used by terrorists is staggering.... Some authors also point to the danger of genetically engineered organisms,

but most consider these to be too sophisticated and hence rather unlikely for terrorist use..... Regarding biological agents, experts believe that terrorists would be more likely to choose a bacteriological rather than a viral or...and viruses are more difficult than bacteria to cultivate and often do not live long outside a host, making them more difficult to disseminate effectively. Some toxins have the advantage of being more stable, with some being both relatively simple to manufacture and extremely toxic.

Experts disagree over whether CB terrorists are more likely to prefer chemical over biological agents, some insisting that the former are cheaper and easier to manufacture and use, others that the latter are more easily acquired and could produce a higher number of casualties.... If the comparative advantages of chemical and biological agents are not always clearcut, however, those between chemical and biological weapons on the one hand, and nuclear weapons on the other-in regard to such aspects as ease of manufacture or other acquisition, as well as selectivity in targeting-appear obvious" (Purver, 1995).

It appears that research has been conducted in distribution of pathogens in aerosols since the time of that report 1995. Aerosol transmission would make delivery of viral weapons an attractive means as it would reduce costs of manufacture weapons, because of the virus' ability to replicate within the human body and spread from person to person. Research has demonstrated that in 2008 that progress was being made in the aerosol spread of biological agents with from this quote: "A wide range of microorganisms could potentially be used as weapons of mass destruction. The ideal agent for bioterrorism would be capable of producing illness in a large percentage of those exposed, be disseminated easily to expose large numbers of people (eg, through aerosol), remain

stable and infectious despite environmental exposure, and be available to terrorists for production in adequate amounts. Fortunately, very few agents have these characteristics" (MD, MD, & DO, 2008).

This same study mentions the importance of preparing for an adverse event, as a bioterrorism/outbreak preparation are essentially the same. "The expertise of emergency physicians and infectious disease specialists will be critical to effective planning and execution of an effective response to a bioterrorism event. Many principles used to prepare for an outbreak caused by terrorists would also be applicable to developing a response to a natural outbreak, such as an influenza pandemic (eg, Avian influenza) or severe acute respiratory syndrome epidemic" (MD, MD, & DO, 2008).

The same Biological Terrorism study stresses critical actions early in the event, Infection control is mentioned, however it makes a critical failure in not identifying engineering controls as part of that process. "Critical actions in the early stages of an event include identifying the causative agent and, if necessary, initiating infection control measures to decontaminate victims and prevent further spread of the disease" (MD, MD, & DO, 2008).

The CDC has identified several organisms that are believed to be of the greatest priority and smallpox is named in the highest category (MD, MD, & DO, 2008). Monkeypox has been identified as a similar virus to smallpox and has been the subject of experimentation of aerosol delivery (Nalca et al., 2010). Monkeypox "causes a disease in humans that is clinically indistinguishable from ordinary smallpox, with the exception of lymphadenopathy" (Nalca et al., 2010). This study goes on to further state the similarities of aerosolized Monkeypox to that of smallpox. "However, aerosol delivery of MPXV [Monkeypox] most closely mimics the route of natural transmission of smallpox

among humans, which is by the respiratory route.... The pathogenesis of aerosol MPXV infection is comparable to smallpox because the infection is initiated in the respiratory mucosa followed by spread to local lymph nodes before primary viremia ensues (Breman & Henderson, 1998). A study in 1998 discussed the potential that Monkeypox could replace smallpox as a primary bioterrorism threat (Breman & Henderson, 1998).

THE DEFINITION OF TERRORISM IN THE CRIMINAL CODE OF CANADA SECTION 83.01(b)

The Criminal Code defines terrorism in 83.01(1)(b) as:

> ***terrorist activity*** means
>
> (b) an act or omission, in or outside Canada,
>
> (i) that is committed
>
> (A) in whole or in part for a political, religious or ideological purpose, objective or cause, and
>
> (B) in whole or in part with the intention of intimidating the public, or a segment of the public, with regard to its security, including its economic security, or compelling a person, a government or a domestic or an international organization to do or to refrain from doing any act, whether the public or the person, government or organization is inside or outside Canada, and
>
> (ii) that intentionally
>
> (A) causes death or serious bodily harm to a person by the use of violence,
>
> (B) endangers a person's life,
>
> (C) causes a serious risk to the health or safety of the public or any segment of the public,

(D) causes substantial property damage, whether to public or private property, if causing such damage is likely to result in the conduct or harm referred to in any of clauses (A) to (C), or

(E) causes serious interference with or serious disruption of an essential service, facility or system, whether public or private, other than as a result of advocacy, protest, dissent or stoppage of work that is not intended to result in the conduct or harm referred to in any of clauses (A) to (C),

and includes a conspiracy, attempt or threat to commit any such act or omission, or being an accessory after the fact or counselling in relation to any such act or omission, but, for greater certainty, does not include an act or omission that is committed during an armed conflict and that, at the time and in the place of its commission, is in accordance with customary international law or conventional international law applicable to the conflict, or the activities undertaken by military forces of a state in the exercise of their official duties, to the extent that those activities are governed by other rules of international law. (activité terroriste)

SEVERE INTERFERENCE WITH AN ESSENTIAL SERVICE

On July 23, 2020 two actions that constitute actions consistent with contravention of section 83.01(b) of the Criminal Code and violations of other sections of the Criminal Code including without limitation 269.1, 463 and 465, and the CONVENTION AGAINST TORTURE AND OTHER CRUEL,INHUMAN OR DEGRADING TREATMENT OR PUNISHMENT. The actions were as follows: the abduction of the Chief Executive Officer and the Chief Communications Officer of DSR Karis Consulting Inc. for the purposes of preventing several persons from reporting terrorism, torture and other crimes against Canada and the United States; the subsequent torture of the Chief Communications Officer at the Saskatchewan Hospital where she also worked as a peace officer for the

purposes of extracting corporate information from DSR Karis Consulting Inc. for the purpose of permanently disrupting its essential services; and using violence against United States citizen by way of intimidation; forcible confinement and forced ejection from the registered office of DSR Karis Consulting Inc. for the purpose of permanently disrupting its essential service in a manner that was intended to result in the conduct or harm referred to in any of clauses (A) to (C) of 83.01(b).

A number of state and private actors have interfered with DSR Karis, Dale J. Richardson and Kaysha F.N. Richardson over the course of almost two years. (See Appendix D, E) This interference has hindered DSR Karis from providing its essential services and aiding parties for the purpose implementing proper infection controls based on pioneered research. The egregious amount of unlawful actions directed towards DSR Karis and its officers, agents and affiliates is unwarranted unless it stood as an instrument that hindered unlawful activity. Since its business is relating to infection controls, it is probable that the organized attacks against it are for the purposes of bioterrorism specifically aimed at small businesses. These unlawful actions directed towards DSR Karis must be immediately stopped as it is the public interest for it to provide its essential services to the public and to inform the necessary authorities of its research to protect the public.

DSR Karis is a member of Innovation Credit Union and has been hindered by rogue agents suspected of financing bioterrorism from calling a meeting of the members to inform them of the financial threat to the members of Innovation Credit Union. This extremely suspicious behaviour from parties who have a fiduciary duty to inform the members of Innovation Credit Union of financial losses. When taking into consideration

that the rogue agents were being sued along with the SHA on July 23, 2020, their actions follow a pattern consistent with covering up negative actions. This pattern of suspicious behaviour is furthered by their participation in the vexatious litigation proceeding in collusion with the Attorney General of Saskatchewan, the SHA, the Court of Appeal for Saskatchewan, several judges from the Court of Queen's Bench for Saskatchewan and the Federal Court of Canada. The fact that the Federal Court of Canada has refused to allow DSR Karis its charter right to speak and defend itself, makes it highly probable that bioterrorists exist within the Federal Court of Canada. The Federal Court of Canada has repeatedly denied expert reports that were in the public interest to act on. The only reasonable conclusion is that there is a network of terrorists operating in Canada to distribute a biological weapon in Canada and based on its proximity, the United States. This would make Canada the primary staging grounds for a biological attack against the United States. The final rejection of the attempts of DSR Karis Consulting Inc. to exercise its lawful duty to report terrorist activity by way of intervention into a motion designed to permanently disrupt unconstitutionally its essential services was rejected by Justice Brown of the Federal Court of Canada by way of his agent Jonathan Macena in a communication in T-1404-20 with these words on May 27, 2022 “Hello Mr. Richardson,

Please note that I already provided your documents to the attention of The Honourable Justice Brown and it will not be filed as it does not comply with the Federal Courts Rules. The hearing will stand for 10:30 (EST) on Monday.

See you then, Have a good weekend” (Richardson, 2022). In addressing DSR Karis Consulting Inc., as Dale J. Richardson, Jonathan Macena treated them as the same person. The bias demonstrated by Jonathan Macena when Chantelle Eisner submitted a

document that broke Federal Court of Canada Rules and demonstrated Mens Rea (intent) to disrupt the essential services of DSR Karis Consulting Inc. in a manner not sanctioned in 83.01(b) of the Criminal Code and; Jonathan Macena, Justice Brown and the Defendants accepted the criminal conduct, rule contravention and conducted the hearing to punish multiple persons without representation on May 30, 2022 which includes without limitation, DSR Karis Consulting Inc., Dale J. Richardson, and Robert A. Cannon. Robert A. Cannon purportedly had counsel present Lawrence Jay Litman, a lawyer who is a member of the California, Nevada and Saskatchewan Bar.

Lawrence Jay Litman is an international lawyer who argued that the Chief Communications Officer of DSR Karis Consulting Inc. was tortured for political reasons in Canada, and that being an American Indian who is a citizen Mètis Nation of Saskatchewan also played a role. She was arrested at Sweetgrass MT, on October 1, 2020 when attempting to enter the United States for protection as an American Indian under the Jay Treaty, but was refused due to Blood Quantum. After such refusal she filed for asylum under the CONVENTION AGAINST TORTURE AND OTHER CRUEL,INHUMAN OR DEGRADING TREATMENT OR PUNISHMENT. She was arrested by CBP Officer Jonathan Grewak for not having proper documentation. She arrived at the Sweetgrass point of entry with the following documents without limitation, her Canadian Passport, her American Indian citizenship card from Saskatchewan, and drivers licence. While in custody of the Department of Homeland Security, repeated attempts were made to withhold, conceal and destroy her identity documents. The Chief Executive Officer of DSR Karis North Consulting Inc. was arrested at Sweetgrass MT, on April 26, 2022 for having improper travel documents after being arbitrarily detained and

tortured for the purposes of extracting corporate information relating to DSR Karis North Consulting Inc. and DSR Karis Consulting Inc. for the purposes of destroying them and preventing the reporting of without limitation, terrorism, child trafficking and treason in Canada and the United States. the Chief Executive Officer presented his Canadian passport and articles of incorporation of DSR Karis North Consulting Inc. demonstrating that he is the Director of the same and was entering in as a director; as the Chief Communications Officer was awaiting the processing of a work visa to conduct essential services for DSR Karis North Consulting Inc.. DSR Karis North Consulting Inc. has been unable to conduct its essential services as a result of the actions of rogue agents of the Department of Homeland Security.

The Chief Executive Officer was denied due process and had 6 volumes of evidence outlining torture, terrorism treason against Canada and the United States shut out by rogue agents of the Department of Homeland Security, the Department of Justice and actors in Canada which includes without limitation, the Attorney General of Canada, Federal Court of Canada and counsel of the Defendants in T-1404-20. He was forcefully deported to a high risk of torture and death without any due process and in violation of numerous laws.

IDEOLOGICAL, RELIGIOUS AND POLITICAL PURPOSE

For the crime of terrorism there must be a political, religious, or ideological purpose, objective or cause. The severe interference has been established as outlined in section 83.01(b)(ii)(E) of the Criminal Code. This portion will examine objectives and causes. The religious and political purposes have been outlined in T-1403-20 in Appendix G. The term

ideology will be defined for the purposes of this section. This definition of ideology was taken from Merriam-Webster dictionary.

Definition of ideology

1a: a manner or the content of thinking characteristic of an individual, group, or culture (Merriam-Webster, 2019) from this definition, ideology will describe the manner of thinking which is displayed by actions of the group. For the intents and purposes, the definitions used in T-1403-20 and T-1404-20 to describe the organized crime group will be used. The ideology is a description of the manner of thinking as demonstrated by observable behaviour. An examination of the documentation provided in Appendix C, E, G, H) clearly outlines the predatory behaviour, that indicates a predatory mindset. This is a predatory ideology. What it the objective or cause of that predatory mindset? The trafficking of children. Dale J. Richardson submitted over 670,000 documents as evidence in Saskatchewan courts and Dale J. Richardson has no access to his child Karis Kenna Nicole Richardson. It is impossible for that much work to be done and produce no positive results, when it has been demonstrated that there has been a consistent pattern of criminal behaviour from the Defendants in T-1404-20 and T-1403-20. Based on previous actions by the Federal Court of Canada, it is highly probably that an order for vexatious litigation was made against Dale J. Richardson and stated on the record that it was "sent" to him and he acknowledged it when he really did not. This would suggest that there is an active conspiracy to murder him again, just as there was one on December 30, 2021 at Coutts, AB and Sweetgrass MT as outlined in Appendix E. Since the purpose of preventing Dale J. Richardson from entering the United States was to stop him from bringing evidence of treason before the Congress of the United States with a second

witness, it is a reasonable assumption that they are engaged in the act of treason in the United States or attempting to effect its overthrow, and this is consistent with arguments in the documentation in Appendix A-H. The fact that the request for information at E-Health Saskatchewan that demonstrates that Dale J. Richardson is still in custody at Battlefords Mental Health Centre, and the Attorney General of Canada is going to every Court that Dale J. Richardson has submitted doctor's notes to demonstrates a deliberate attempt to remove records of medical treatment outside Saskatchewan to return him there to kill him. Act as he never left and was sending out documents as an insane man to parties to file documents on his behalf. This explains why each party pretends that that they cannot understand the documents and forbid the recording of hearings. (See Exhibit H) It is an attempt to cover up what has been done. The only solution to this matter is to murder Dale J. Richardson. Every party is a conspirator to commit murder.

There is sworn testimony of a four year old child attempting to insert his penis in the mouth of another four year old child in secret, that was never refuted by the only other party in the proceedings who could refute it (see Appendix F). Dale J. Richardson wanted an investigation which is reasonable given the circumstances. Robert A. Cannon when purportedly discovering this information purportedly asked for an investigation by way of a habeas corpus. Each habeas corpus was denied without any of the parties responsible for detention ever having to explain the detention even though Karis Kenna Nicole Richardson still is in detention and it has been clearly established that her detention was obtained and maintained by criminal activity by both state and private actors acting in concert with each other. This is a demonstration of hindering an investigation into child molestation and expending an exorbitant amount of resources to do so. The reasonable

conclusion is that child molestation is occurring as it is abnormal behaviour for the state to expend such resources to hinder such allegations.

Since an excessive amount of unlawful actions have occurred in multiple jurisdictions in multiple countries as outlined in the Appendices, this unlawful restraint fits the description of 279.001(1) of the Criminal Code which reads as follows:

> **Trafficking of a person under the age of eighteen years**
>
> 279.011 (1) Every person who recruits, transports, transfers, receives, holds, conceals or harbours a person under the age of eighteen years, or exercises control, direction or influence over the movements of a person under the age of eighteen years, for the purpose of exploiting them or facilitating their exploitation is guilty of an indictable offence and liable
>
> (a) to imprisonment for life and to a minimum punishment of imprisonment for a term of six years if they kidnap, commit an aggravated assault or aggravated sexual assault against, or cause death to, the victim during the commission of the offence; or
>
> (b) to imprisonment for a term of not more than fourteen years and to a minimum punishment of imprisonment for a term of five years, in any other case.
>
> **Consent**
>
> (2) No consent to the activity that forms the subject-matter of a charge under subsection (1) is valid.
>
> **Exploitation**
>
> 279.04 (1) For the purposes of sections 279.01 to 279.03, a person exploits another person if they cause them to provide, or offer to provide, labour or a service by engaging in conduct that, in all the circumstances, could reasonably be expected to cause the other person to believe that their safety or the safety of a person known to them would be threatened if they failed to provide, or offer to provide, the labour or service.

Fighting to leave a child in the care of a person who thinks that a four year old child attempting to insert their penis into the mouth of another four year old child fits the criteria of exploitation and consent of the other parent does not matter for the purposes section 279.011 (1). Since even the Attorney General of Canada has been involved and on March 18, 2022 committed perjury and used an unlawful order of the court, and lied about Dale J. Richardson being arrested before entering the Court of Queen's Bench for Saskatchewan, in a hearing in the Court of Queen's Bench for Alberta, stating that Dale J. Richardson lost custody without prejudice and then was arrested; it is a reasonable assumption that the Attorney General of Canada is involved in the trafficking of children for the objective of child molestation. Based on the risk assessment this is a possibility that has to be accounted for until it is ruled out. However, since the Attorney General of Canada provided evidence to the Federal Court of Canada in T-1404-20 in April of 2021 that has sworn testimony from the Battlefords Royal Canadian Mounted Police that Justice R.W. Elson directed them to keep Dale J. Richardson out of the Court of Queen's Bench for Saskatchewan on July 23, 2020. There were two matters that day. The family matter and a matter for DSR Karis Consulting Inc. and Justice R.W. Elson presided over both and both were first appearances. The silence of the media, the judiciary, executive and administrate branches of government in Canada and the United States, and other state and private actors in the same, and the central authorities in the Hague convention demonstrates that there is a vast network of agents in this organization defined in T-1403-20 and T-1404-20 as “masons” whose ideology is the trafficking of children for the purposes of molestation and is extremely secretive and predatory which would be required to gain access to children. Murder in secret of the weak and the most vulnerable

is part of this ideology as it is clearly demonstrated by the actions of agents who have attempted to do such in the documents outlined in the Appendices.

IN WHOLE OR IN PART FOR INTIMIDATING

Since this ideological, political and religious purpose is tied to SARS-Cov-2 and improper implementation of AGMP guidance that would have reduced the loss of life, and did not follow proper infection control procedures by almost wholly eliminating proper engineering controls, it would be unreasonable to discount it being tied to the entire SARS-Cov-2 pandemic. The number of health regions in Canada alone using the same faulty guidelines in the same manner is wholly unreasonable. It is impossible for them to have made the same mistake unintentionally, and it must be considered deliberate. This aspect must be considered that every lock down, every form of intimidation, job loss, coercive measure associated with the SARS-Cov-2 or any future contagion that is addressed in the same or a similar manner as a part of the same ideology that is working for the systemic trafficking of children for the purpose of raping them.

ARTICLE III SECTION 3 OF THE CONSTITUTION OF THE UNITED STATES

Section 3. Treason against the United States, shall consist only in levying War against them, or in adhering to their Enemies, giving them Aid and Comfort. No Person shall be convicted of Treason unless on the Testimony of two Witnesses to the same overt Act, or on Confession in open Court.

The Congress shall have Power to declare the Punishment of Treason, but no Attainder of Treason shall work Corruption of Blood, or Forfeiture except during the Life of the Person attainted.

Since treason is defined in the United States Constitution it is for every person, citizen or anyone otherwise domiciled in the United States to know what it is. This is derived from the plain writing of the preamble of the United States Constitution:

CONSTITUTION OF THE UNITED STATES

We the People of the United States, in Order to form a more perfect Union, establish Justice, insure domestic Tranquility, provide for the common defence, promote the general Welfare, and secure the Blessings of Liberty to ourselves and our Posterity,

do ordain and establish this Constitution for the United States of America.

The term "We the People of the United States" is who the United States Constitution is for and it is the people who must understand it. Treason is a crime that is rooted in conspiracy. It is impossible to commit treason without conspiracy. *Conspiracy to altogether prevent enforcement of statute of United States is conspiracy to commit treason by levying war against the United States. Bryant v. United States, 257 F. 378, 1919 U.S. App LEXIS 2212(5th Cir. 1919).*

Since multiple unconstitutional measures have been used to prevent the enforcement of a United States statute and that the United States Constitution is the greatest statute any attempt to conspire to abrogate any such portion of any of it is an attempt to overthrow the United States, and any person who hinders, obstructs, delays, molests, attempts to kill, destroy, or any other action or omission in whole or in part to prevent the reporting

of treason is an overt act in the over throw of the United States. Every party involved in T-1404-20, and T-1403-20 or conspirators after fact is either a traitor to the United States or its enemy. The organization that is working effectively to overthrow the United States is a transnational organization defined as the “masonic conspirators” in T-1404-20 and “T-1403-20. This organization defined as an enemy the United States has now engaged in the crime of aggression as defined by the Rome Statute.

There are actors in every level of the judiciary in Canada and the United States up to the Supreme Court of Canada and the Supreme Court of the United States. The Supreme Court of Canada has effectively legalized child trafficking for the purpose of raping children by denying the constitutional right of habeas corpus to a child when there are compelling evidence of child molestation. The Supreme Court of the United States has sanctioned the trafficking of children Canada for the purpose of their rape and extermination and have hindered for almost 6 months the first witness to treason against the United States who has submitted a writ of certiorari arguing treason against the United States and requesting the protection thereof. This action has endorses the continued de facto extradition of American children to Canada to be trafficked for the purpose of being raped and exterminated with the American Indians being the primary targets. The rogue agents of the Supreme Court of the United States have permitted Canada to be used as the primary staging ground for an attack against the United States by preventing the reporting of treason to altogether prevent the enforcement of Article III Section 3 of the United States Constitution. (see Appendices)

HIGH TREASON AND TREASON CRIMINAL CODE OF CANADA

A definition of high treason and treason in Canada will be listed here and a brief discussion. Further discussion of high treason and treason will be discussed later in the study.

High treason

46 (1) Every one commits high treason who, in Canada,

(a) kills or attempts to kill Her Majesty, or does her any bodily harm tending to death or destruction, maims or wounds her, or imprisons or restrains her;

(b) levies war against Canada or does any act preparatory thereto; or

(c) assists an enemy at war with Canada, or any armed forces against whom Canadian Forces are engaged in hostilities, whether or not a state of war exists between Canada and the country whose forces they are.

Treason

(2) Every one commits treason who, in Canada,

(a) uses force or violence for the purpose of overthrowing the government of Canada or a province;

(b) without lawful authority, communicates or makes available to an agent of a state other than Canada, military or scientific information or any sketch, plan, model, article, note or document of a military or scientific character that he knows or ought to know may be used by that state for a purpose prejudicial to the safety or defence of Canada;

(c) conspires with any person to commit high treason or to do anything mentioned in paragraph (a);

(d) forms an intention to do anything that is high treason or that is mentioned in paragraph (a) and manifests that intention by an overt act; or

(e) conspires with any person to do anything mentioned in paragraph (b) or forms an intention to do anything

mentioned in paragraph (b) and manifests that intention by an overt act.

Canadian citizen

(3) Notwithstanding subsection (1) or (2), a Canadian citizen or a person who owes allegiance to Her Majesty in right of Canada,

(a) commits high treason if, while in or out of Canada, he does anything mentioned in subsection (1); or

(b) commits treason if, while in or out of Canada, he does anything mentioned in subsection (2).

Overt act

(4) Where it is treason to conspire with any person, the act of conspiring is an overt act of treason.

Section 46(1)(b) of the Criminal Code identifies levying war or any act preparatory as an act of high treason. Installing guidelines in Canada on a provincial and federal level that would facilitate the distribution of a biological weapon that would interfere with the territorial integrity of Canada would constitute an act preparatory to levying war against Canada. Weakening the ability of a country to defend or creating the conditions to maximize the effectiveness of a weapon is an act preparatory to levying war by virtue of what is being done and this action is aggravated by the fact that the weakness is easily accessible to the enemies of Canada that makes it very likely that a weakness such as the one implemented on a federal as well as provincial levels would be exploited by enemies. A further discussion on high treason and treason will ensue after a brief discussion on the connection of the aforementioned crimes and their relation to the civil court system in Canada.

FRAUD IN THE CANADIAN CIVIL COURT SYSTEM (380(1) OF THE CRIMINAL CODE)

It is recognized that there are two branches of the judicial system in Canada the criminal and civil branches. This division of the civil and criminal exists in the United States as well. First the criminal code section of fraud will be presented and then discussed in light of relevant events in another section.

> **Fraud**
>
> 380 (1) Every one who, by deceit, falsehood or other fraudulent means, whether or not it is a false pretence within the meaning of this Act, defrauds the public or any person, whether ascertained or not, of any property, money or valuable security or any service,
>
> (a) is guilty of an indictable offence and liable to a term of imprisonment not exceeding fourteen years, where the subject-matter of the offence is a testamentary instrument or the value of the subject-matter of the offence exceeds five thousand dollars; or
>
> (b) is guilty
>
> (i) of an indictable offence and is liable to imprisonment for a term not exceeding two years, or
>
> (ii) of an offence punishable on summary conviction,
>
> where the value of the subject-matter of the offence does not exceed five thousand dollars.

Subsection (a) mentions a testamentary instrument in the section which is relating to wills. The law insider website defines “testamentary instrument means a will or designation or a document naming a person to receive a payment or series of payments on death under a plan or arrangement of a type similar to a benefit plan” (Law Insider Inc., n.d.). From this definition it can be determined that fraud covers actions in the civil branch of the judicial system since wills are not under the domain of the criminal courts. This plain reading of the Criminal Code demonstrates that crimes can be committed

within the domain of the civil court system. It is reasonable that the civil court system must be subjected to criminal law or it would create a place that would breed corruption based on being out of the reach of criminal penalties for crimes committed. The risk for organized crime to infiltrate the civil courts is extremely high since the practice has been to not apply criminal laws to the civil courts. The plain reading of section 380(1) of the Criminal Code demonstrates that crimes can be committed in the civil context that are punishable by the criminal court system. This is a reasonable interpretation based on the plain reading of section 380(1) of the Criminal Code.

THE CRIME OF AGGRESSION

The crime of aggression means "the planning, preparation, initiation or execution, by a person in a position effectively to exercise control over or to direct the political or military action of a State, of an act of aggression which, by its character, gravity and scale, constitutes a manifest violation of the Charter of the United Nations."

The actions of the transnational organization qualifies as an act of aggression by seeking to control the political action by the state. Invasion by way of infiltration will qualify in this manner and a biological agent used to attack populations will qualify for us of a weapon and the world wide scale is a manifest violation of the Charter of the United Nations.

A BRIEF STATISTICAL ANALYSIS EXAMINING CHILD TRAFFICKING, JUDICIAL ACTIONS AND AN ENGINEERING REPORT EXPOSING BIO-TERRORISM

INTRODUCTION

This is a brief statistical analysis of court cases in which DALE J. RICHARDSON was involved. Three Canadian jurisdictions will be examined. A number of charts have been made to analyze some data. First the Case Management T-1404-20 will be examined as that was ordered to have a single Prothonotary of the Court over look the matter. The other two matters were not ordered into any case management. However, in the Court of Queen's Bench for Alberta matter Associate Chief Justice Rooke seized the matters to himself after they were in progress. For all intents and purposes, since there was no case management officially ordered the Court of Queen's Bench for Alberta matters will not be treated as a case management. The interpretation of the results will be done conservatively to account offset any bias based on the personal connection of the author to the facts. There is no studies on child trafficking in the context of the judicial system in Canada and this is presumably based on the assumption of no corruption in the judiciary. From a risk assessment perspective this a fatal assumption. It is hypothesized that there has not been sufficient analysis of risk to mitigate corruption in the judiciary which would provide an avenue to facilitate corruption within the judicial branch of the government. The high degree of legal manoeuvring to take steps to evade the appearance outright criminal activity strongly suggests a network of persons with high legal capability executing the actions.

STATISTICAL ANALYSIS

The case management will be examined first. From taking a percentage of all orders, decisions and directions given or made in T-1404-20, Prothonotary Tabib had made 48.9% of all of the judicial actions in T-1404-20. Since this is a case management, it is expected that Prothonotary Tabib make most of the decisions, a factor that may affect this number

is that there are limits of the types of decisions that prothonotary can make in the Federal Court of Canada. In the other two Courts examined, all the decision makers are judges with the full powers and privileges of their respective courts. This may affect the need for more judges in T-1404-20. This issue will be discussed later on in the analysis. The next highest percentages are Justice Brown at 20% and Justice Pentney at 11.1%. Judicial Adminstrator Trudeau had 6.7%, however she made orders at the direction of Chief Justice Paul S. Crampton. For the purposes of this portion we will examine her actions separately. The last three Judges had 4.4% of the actions in this matter each. See Fig. 1

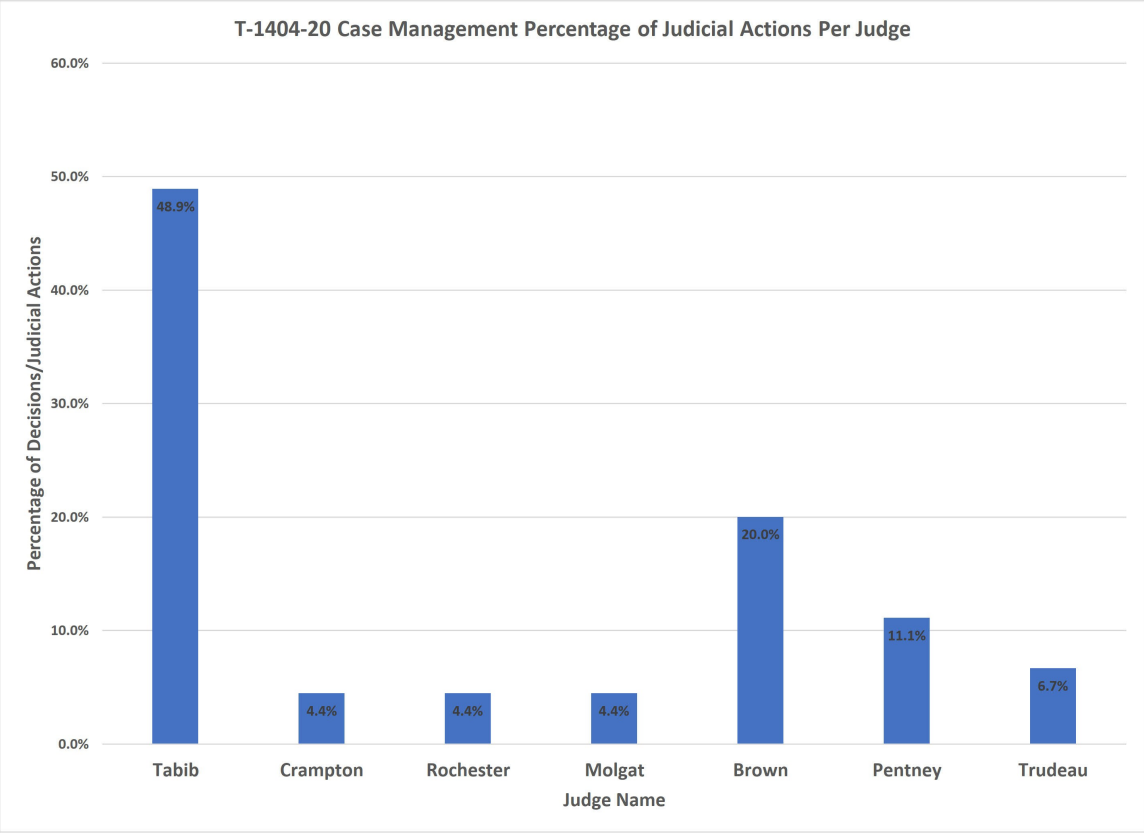


Table 5: T-1404-20 Data

In the Court of Queen's Bench for Alberta matters, there are two actions that were separate, however, since the actions of Associate Chief Justice Rooke have effectively combined the two, it will examined as one group of decisions. In that population, there are three judges. Two of the judges have made 10% of the decisions each and Associate Chief Justice Rooke making the remaining 80% of the decisions himself. The high percentage of the decisions made by Associate Chief Justice Rooke suggests that these matters may be treated like a case management.

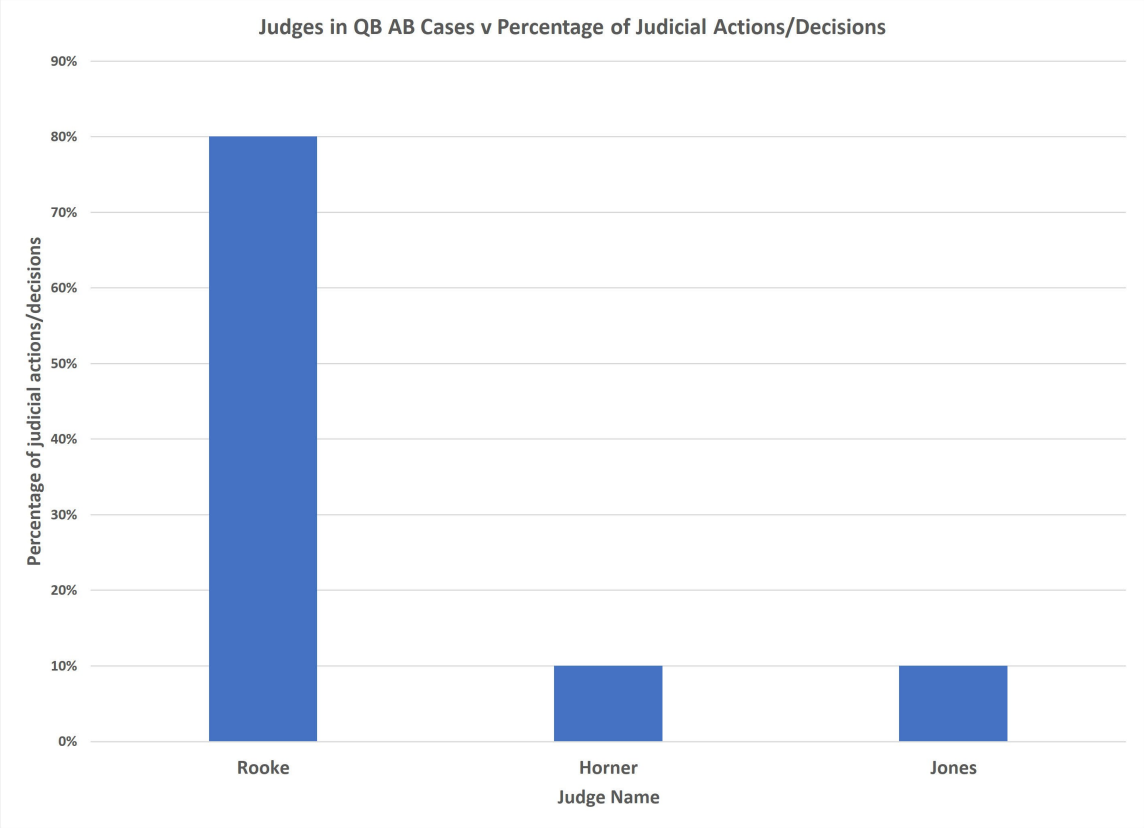


Table 6: Queen's Bench for Alberta Data

In the Court of Queen's Bench for Saskatchewan chart, it focuses on a single matter DIV 70 of 2020. In that population there are 5 judges and four of them have taken 8.3% judicial actions in that matter each, and one judge is an outlier taking 66.7% of the

judicial actions, and that is Justice Zuk. Since this is not a case management it is curious that a single judge would account for 66.7% of the actions in the matter. The percentages suggests that the matter is being specially managed without officially being declared as such. When this distribution appears to follow the same trend as a case management, further examination is warranted.

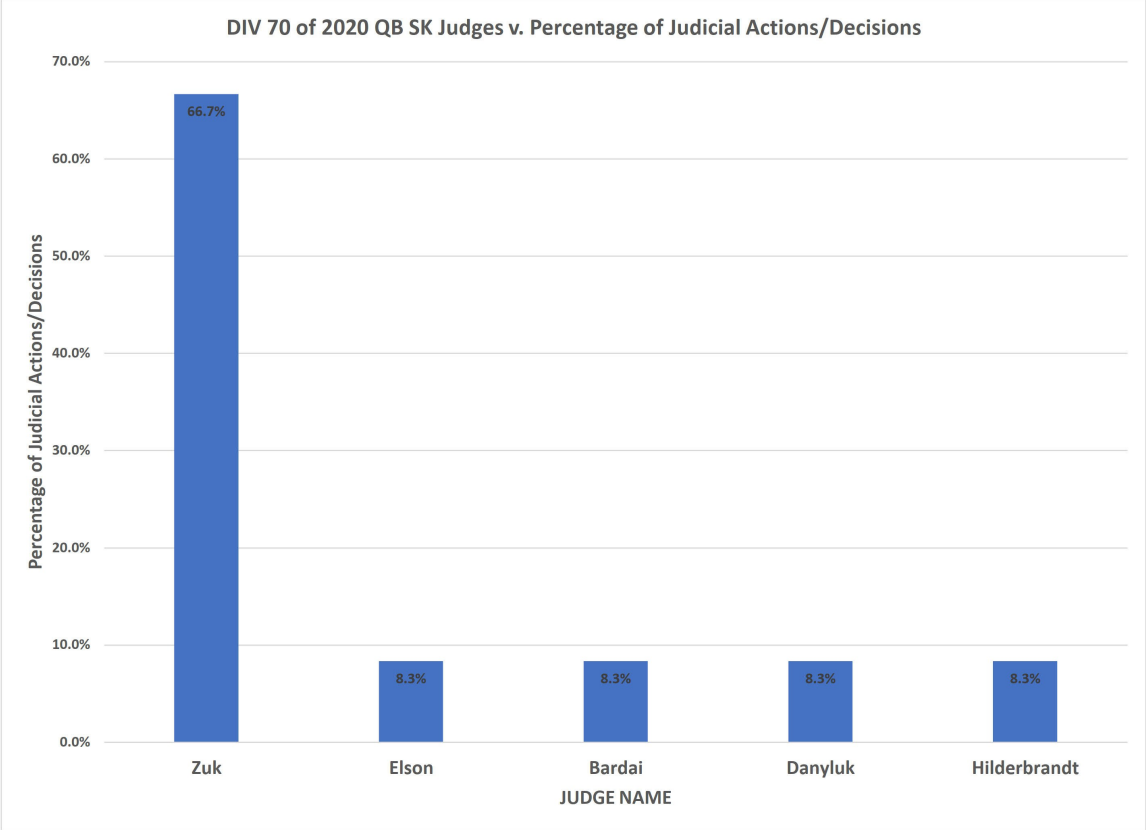


Table 7: DIV 70 of 2020 (SK) Data

An examination of DIV 70 of 2020's first decision will be examined. It was the first case and one of the elements that are tied to every case, so it should be discussed. Other documents attached to this discussion will support the facts associated with this analysis, however, the order issued by Justice R.W. Elson has been the subject of controversy as were the events that took place on July 23, 2020. A brief discussion will give necessary

context. This order was given on a first appearance in a divorce hearing. There as some things to note before the order shown below can be discussed. Based on the testimony of unknown members of the Battlefords Royal Canadian Mounted Police, Justice R.W. Elson directed them to keep Dale J. Richardson out of the Court of Queen's Bench for Saskatchewan from a communication on July 22, 2020.

QUEEN'S BENCH FILED JUL 23 2020 Judicial Centre of Battleford

COURT FILE NUMBER DIV NO. 70 OF 2020

COURT OF QUEEN'S BENCH FOR SASKATCHEWAN (FAMILY LAW DIVISION)

JUDICIAL CENTRE BATTLEFORD

PETITIONER KIMBERLEY ANNE RICHARDSON

RESPONDENT DALE JAMES RICHARDSON

07/23/2020 4:03PM 000000#0005 0001
ORDER/JUDGMENT $20.00

INTERIM ORDER

Before the Honourable Mr. Justice R.W. Elson in Chambers the 23rd day of July, 2020.

On the application of Patricia J. Meiklejohn, lawyer on behalf of the Petitioner and on Dale James Richardson, the Respondent, not being present and on reading the materials all filed:

The Court orders:

1. The Petitioner, Kimberley Anne Richardson, shall have interim sole custody of the child, Karis Kenna Nicole Richardson, born February 9, 2019.
2. The Primary residence of the child, Karis Kenna Nicole Richardson, born February 9, 2019 shall be with the Petitioner, Kimberley Anne Richardson.
3. The Respondent, Dale James Richardson, shall have supervised specified access to the child, Karis Kenna Nicole Richardson, born February 9, 2019.
4. The Respondent is prohibited from the use or consumption of alcohol and/or non-prescription drugs while the child, Karis Kenna Nicole Richardson is in his care or in his presence.
5. The child, Karis Kenna Nicole Richardson, born February 9, 2019, shall remain resident in the Province of Saskatchewan.
6. The Respondent shall not leave the Province of Saskatchewan with the child, Karis Kenna Nicole Richardson, born February 9, 2019, for any period of time without the written advance consent of the Petitioner.

Page 1 of 2

Figure 13: Interim Order Page 1

7. The child, Karis Kenna Nicole Richardson, born February 9, 2019 shall not be left alone with or in the care of Kaysha Faith Neasha Richardson born March 16, 1997.

8. The issue of parenting is adjourned to August 27, 2020 to be reviewed.

9. The Respondent shall provide financial disclosure pursuant to the requirements of the *Federal Child Support Guidelines*.

10. The Petitioner, Kimberley Anne Richardson, shall have exclusive possession of the family home and household goods. The Respondent shall vacate the home on or before July 30, 2020.

11. The family home located at 1292 95th Street North Battleford, Saskatchewan, Surface Parcel #153874659 shall be listed for sale with a registered Real Estate Broker forthwith.

12. The Petitioner shall be authorized to solely negotiate and agree to the listing agreement and sale price and sale terms

13. The Net Sale Proceeds be held in trust by counsel for the Petitioner or alternatively that the Net Sale Proceeds be paid into Court to the credit of this action.

14. The Respondent shall not molest, annoy, harass, communicate with or otherwise interfere with the Petitioner, Kimberley Anne Richardson.

15. Costs of this application be paid to the Petitioner, Kimberley Anne Richardson.

ISSUED at Battleford, Saskatchewan this 23 day of July, 2020.

D/ Local Registrar

CONTACT INFORMATION AND ADDRESS FOR SERVICE
Matrix Law Group; Attn: Patricia J. Meiklejohn 1421 101st Street, North Battleford SK S9A 1A1
Telephone number: (306) 445-7300; Fax number: (306) 445-7302; Email Address: patriciam@matrixlawgroup.ca;
File Number: 63095-412 PJM

Page 2 of 2

Figure 14: Interim Order Page 2

CONTEXT SURROUNDING FIRST JUDICIAL ACTION IN DIV 70 of 2020

What is significant is that Justice R.W. Elson was presiding over two matters on July 23, 2020 in which Dale J. Richardson was to appear for. DIV 70 of 2020 the family matter and QBG 156 of 2020 a matter for DSR Karis Consulting Inc. which was associated with the engineering guidelines and the research pioneered by Dale J. Richardson. The Royal Canadian Mounted Police testified that Dale J. Richardson was arrested on July 23, 2020 in front of the Court of Queen's Bench for Saskatchewan in Battleford SK at about 9:50 am. Dale J. Richardson was taken to the Battlefords Mental Health Centre on a mental health warrant. The Battlefords Mental Health Centre is owned and operated by the Saskatchewan Health Authority who obtained the mental health warrant to apprehend Dale J. Richardson. The Saskatchewan Health Authority were the main focus of the DSR Karis Consulting Inc. court matter in QBG 156 of 2020. The Aerosol Generating Medical Procedures guidance issued by the Saskatchewan Health Authority were the main focus of the litigation. A freedom of information request made by Dale J. Richardson indicated that there was no science to justify the representation of the Aerosol Generating Medical Procedures issued by the Saskatchewan Health Authority . This was what the litigation was in QBG-156 of 2020 was based on. Unscientific guidelines. Justice R.W. Elson asked the counsel for the petitioner in DIV 70 of 2020 to provide an interim order to him on July 22, 2020. The counsel provided a draft order of the interim order to Dale J. Richardson and it was dated for July 22, 2020.

EXAMINATION OF THE INTERIM ORDER

From an examination of the interim order issued by Justice R.W. Elson on July 23, 2020 on the first appearance, some notable issues stand out. A home cannot be ordered sold on a first appearance in a family matter. Possession of the home cannot be given without

consideration given in the family property act. Dale J. Richardson was given no defence to speak to any of the matters as Justice R.W. Elson directed defendants in another matter to prevent him from entering the court, and then cuts off all contact with the child and her father without any justification. Based on the fact that there were a number of unlawful acts that took place to prevent Dale J. Richardson from entering the court, and abduction and torture of Dale J. Richardson and his eldest daughter Kaysha F.N. Richardson, this order is evidence of child trafficking. Justice R.W. Elson set events in motion to abuse the Court of Queen's Bench for Saskatchewan to traffick a child. It is highly probable that the trafficking of the child is in response to the engineering report used to litigate against the Saskatchewan Health Authority , as they would have had no defence for its issuance and would have had to reassess the SARS-Cov-2 pandemic response and would have been liable for substantial losses. Research has demonstrated that the representation of the Aerosol Generating Medical Procedures in a worst case scenario could distribute a biological weapon and make it look like a random outbreak. There is a relationship between Bio-Terrorism and child trafficking for financial exploitation using the civil courts and Justice R.W. Elson is where the relationship is observed. Child trafficking is reinforced by the fact that Kaysha F.N. Richardson has been prohibited from having contact from the child as well, and she is the only other person who has a lawful right of access to the child. Kaysha F.N. Richardson was arrested under the guide of SARS-Cov-2 quarantine measures and tortured for information relating to DSR Karis Consulting Inc. by members of the Battlefords Royal Canadian Mounted Police.

IMPORTANCE OF THE EVENTS IN THE INITIAL CASE

When examining the events in the initial case, having a single judge with a high percentage of appearances is associated with trafficking of a child and suppressing the engineering research exposing the Saskatchewan Health Authority . It is hypothesized that Dale J. Richardson was never supposed to get out of the Battlefords Mental Health Centre to be able to defend himself. From a risk assessment perspective, it is highly unlikely that Justice R.W. Elson would engage in such reckless criminal actions if he believed that he would be held accountable for them. The events that took place on July 23, 2020 to traffick Karis Kenna Nicole Richardson, would result in life sentences for all the people involved. It is a reasonable hypothesis that the events that took place on July 23, 2020 were carried out in such a manner that both matters would have been uncontested, and that they would never have been contested ever again. From these events, it must be determined whether the other matters were presented the same two circumstances, the child trafficking and the bio terrorism. If the two other court matters have these two elements associated with them, further study is warranted.

FRAUD 380(1) OF THE CRIMINAL CODE IN DIV 70 OF 2020

When examining the interim order issued in DIV 70 of 2020 July 23, 2020 it can be determined that there was intent to defraud. There was an application for an interim order that was served on July 9, 2020 to Dale J. Richardson by Patricia J. Meiklejohn of Matrix Law LLP. The family property act and the divorce act do not permit the sale of a home on a first appearance that the respondent is living in. This intent to defraud is made abundantly clear when examining several documents relating to this matter. The other documents are as follows: The order of Justice B.R. Hildebrandt issued February

19, 2021 shown in Figure 15: DIV 70 of 2020 Order February 19 2021 - Fraudulent Transfer of Title, and Figure 16: DIV 70 of 2020 Judgment August 9, 2022 Fraudulent Divorce Judgment.

Copy

QUEEN'S BENCH FILED FEB 19 2021 Judicial Centre of Battleford

COURT FILE NUMBER DIV NO. 70 OF 2020

COURT OF QUEEN'S BENCH FOR SASKATCHEWAN (FAMILY LAW DIVISION)

JUDICIAL CENTRE BATTLEFORD

PETITIONER KIMBERLEY ANNE RICHARDSON

RESPONDENT DALE JAMES RICHARDSON

ORDER

Before the Honourable Madam Justice B.R. Hildebrandt in Chambers the 19th day of February, 2021.

On the application of Patricia J. Meiklejohn, lawyer on behalf of the Petitioner and on Dale James Richardson, the Respondent, not being present and on reading the materials all filed:

The Court orders:

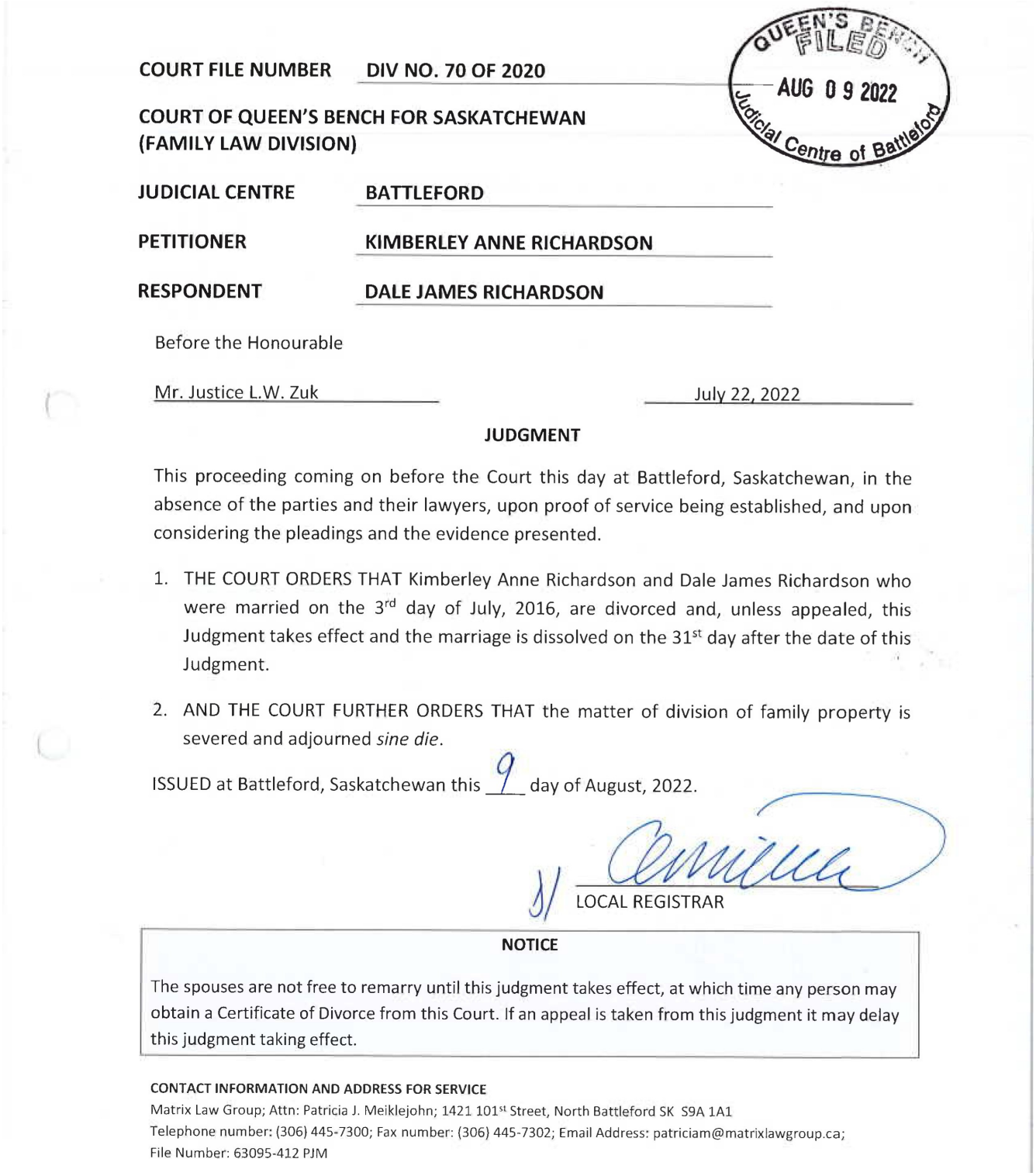
1. Pursuant to s. 109 of *The Land Titles Act,* 2000 the Registrar is directed to transfer to and register Title No. 148683000, having Surface Parcel No. 153874659 into the names of Rachel Mary Florence and Scott Donald Florence.

ISSUED at Battleford, Saskatchewan this 19th day of February, 2021.

D) Local Registrar

CONTACT INFORMATION AND ADDRESS FOR SERVICE
Matrix Law Group; Attn: Patricia J. Meiklejohn 1421 101st Street, North Battleford SK S9A 1A1
Telephone number: (306) 445-7300; Fax number: (306) 445-7302; Email Address: patriciam@matrixlawgroup.ca;
File Number: 63095-412 PJM

Figure 15: DIV 70 of 2020 Order February 19 2021 - Fraudulent Transfer of Title



QUEEN'S BENCH FILED AUG 09 2022 Judicial Centre of Battleford

COURT FILE NUMBER DIV NO. 70 OF 2020

COURT OF QUEEN'S BENCH FOR SASKATCHEWAN (FAMILY LAW DIVISION)

JUDICIAL CENTRE BATTLEFORD

PETITIONER KIMBERLEY ANNE RICHARDSON

RESPONDENT DALE JAMES RICHARDSON

Before the Honourable

Mr. Justice L.W. Zuk July 22, 2022

JUDGMENT

This proceeding coming on before the Court this day at Battleford, Saskatchewan, in the absence of the parties and their lawyers, upon proof of service being established, and upon considering the pleadings and the evidence presented.

1. THE COURT ORDERS THAT Kimberley Anne Richardson and Dale James Richardson who were married on the 3rd day of July, 2016, are divorced and, unless appealed, this Judgment takes effect and the marriage is dissolved on the 31st day after the date of this Judgment.

2. AND THE COURT FURTHER ORDERS THAT the matter of division of family property is severed and adjourned *sine die*.

ISSUED at Battleford, Saskatchewan this 9 day of August, 2022.

/s/ LOCAL REGISTRAR

NOTICE

The spouses are not free to remarry until this judgment takes effect, at which time any person may obtain a Certificate of Divorce from this Court. If an appeal is taken from this judgment it may delay this judgment taking effect.

CONTACT INFORMATION AND ADDRESS FOR SERVICE
Matrix Law Group; Attn: Patricia J. Meiklejohn; 1421 101st Street, North Battleford SK S9A 1A1
Telephone number: (306) 445-7300; Fax number: (306) 445-7302; Email Address: patriciam@matrixlawgroup.ca;
File Number: 63095-412 PJM

Figure 16: DIV 70 of 2020 Judgment August 9, 2022 Fraudulent Divorce Judgment

What can be determined from an examination from the interim order issued July 23, 2020, the next order issued February 19, 2021 and the last judgment issued August 9,

2022 is that the judgment orders that the division of property is severed and adjourned sine die. The term sine die is defined in the following quote “The Latin term sine die translates as “without fixing a day [for future action].” When an adjournment is granted sine die in a court of law, this means that the court has neglected to assign a specific date for another conference or hearing in the future. To adjourn a matter sine die means to adjourn it for an indefinite period of time” (Legal Dictionary, 2017). It is clear that from the interim order issued July 23, 2020 and the subsequent order made February 19, 2021, that the property was already divided and there was no need to sever it from DIV 70 of 2020 and adjourn it sine die.

An action such as the one observed by the judgment issued August 9, 2022 demonstrates that the writer of the judgment was aware that there was an unlawful division of property in DIV 70 of 2020. The language in the interim order reinforces that fact. Paragraph 14 of the interim order states “The Respondent shall not molest, annoy, harass, communicate with or otherwise interfere with the Petitioner, Kimberley Anne Richardson”. With the divorce being concluded, there was no means for the Respondent Dale J. Richardson to communicate to try to bring the matter back to court to deal with the division, nor was there any means for him to communicate with the child, nor was the biological sister of the child left any means to communicate with the child. Furthermore, there was no final custody order ever given with that matter. This is indisputable evidence that the agents of the Court of King's Bench for Saskatchewan were knowingly committing fraud and taking deliberate steps to cover it up. Based on the orders and judgments involved at least three different judges and two registry staff, there is multiple people that are involved in the commission of the fraud in the Court of King's Bench for

Saskatchewan. This is evidence of conspiracy in violation of 465(1) of the Criminal Code and accessory after the fact of the previous crimes in violation of 463 of the same. The applicable sections will be listed in Appendix L. The fraud and the conspiracy crimes will be discussed in more detail later on in the analysis of risk.

T-1404-20 DISCUSSION

The first matter to be examined is T-1404-20. In the statement of facts the main threads are the research which exposed the potential for bio-terrorism and the child trafficking that was used to punish and torture Dale J. Richardson, and the crimes used to prevent him from reporting the terrorist activity and stop the trafficking of his children. There were a number of times in which evidence of these crimes were presented before judges in this matter. The specific responses will not be discussed at this time. It has been demonstrated that bio-terrorism and the child trafficking from July 23, 2020 were associated with that matter. In the motion heard June 10, 2021 before Justice Pentney he declined to comment of the family orders regarding the property. It can be determined that Justice Pentney knew that it was fraud and concealed the fraud. The Attorney General of Canada and the Attorney General of Saskatchewan were also aware of the fraud as did every other counsel including Annie Alport who acted as counsel for the "Matrix Defendants" which included Clifford A. Holm senior partner for Matrix Law LLP. An observation of the actions of the court will demonstrate the covering up of crime.

COURT OF QUEEN'S BENCH FOR ALBERTA DISCUSSION

The third matter is the Court of Queen's Bench for Alberta court cases. An emergency order was being sought before Justice Karen Horner to prevent family violence that had escalated into torture on March 18, 2022. Evidence of child trafficking from July 23, 2020

and the Bio-Terrorism were presented before Justice Karen Horner as well as crimes that were committed to prevent Dale J. Richardson from exposing the child trafficking and bio-terrorism. A more well developed engineering report was presented to Justice Karen Horner. The Attorney General of Canada came in to represent the interests of Kimberley Richardson who consented to the trafficking of Karis Kenna Nicole Richardson, and lied in court with no evidence. The lie of the Attorney General of Canada was exposed in court by Dale J. Richardson. Justice Karen Horner did not allow him to speak or explain his case and dismissed it in favour of the party with no evidence whose statement was proved to be false by evidence that was supplied by the Attorney General of Canada in another matter and photographic and transcript evidence. The Attorney General of Canada knew that fraud was being committed in the Court of King's Bench for Saskatchewan in DIV 70 of 2020 and used the order as justification to shield the trafficking of a child and the crimes committed by all associated parties. The flagrant fraud in the orders presented to the Court of King's Bench for Alberta demonstrates the motive behind Associate Chief Justice Rooke to remove the evidence and declare Dale J. Richardson and anyone associated with him as a vexatious litigant.

A BRIEF COMPARISON OF UNWARRANTED STATES REMOVAL OF A CHILD

A case to briefly examine is a case of unwarranted state interference with Karis Kenna Nicole Richardson’s oldest sister Kaysha F.N. Richardson. On July 17, 1997 Kaysha F.N. Richardson was the subject of unwarranted state interference. Kaysha F.N. Richardson was eventually made a permanent ward of Winnipeg Child and Family Services on November 12, 1998, there are several issues that arose with that matter that are relevant to these matters to assist in the interpretation of the data. The issues are as follows: 1)

There was no lawful reason ever articulated to Dale J. Richardson for the removal of Kaysha F.N. Richardson, 2) Severe discrimination was demonstrated by the state towards Dale J. Richardson, 3) Dale J. Richardson was being mocked by the agents of the state about "conspiracy", 4) What Dale J. Richardson stated or did was interpreted in a negative manner to fit the narrative presented by the agents of the state, 5) the violent nature and unfitness of any party opposing Dale J. Richardson were over looked, 6) Unlawful restraint of a child for the purposes of exploitation, 7) repeated attempts by agents of the state to provoke Dale J. Richardson to erupt with a display of anger.

A BRIEF DISCUSSION ON CHILD TRAFFICKING

The stars foundation states that "60% of all child sex trafficking victims have histories in the child welfare system" ("Foster Children and Sex Trafficking," n.d.) based on this estimate unwarranted state intervention can facilitate exploitation in foster care. The National Foster Youth Institute repeats this number as well "it's estimated that 60 percent of child sex trafficking victims have a history in the child welfare system (S, 2020). A Canadian media outlet the Georgia Straight reports "29 percent of sex workers spent some of their childhood in foster care or another form of government care" (Hui, 2014)

A paper on sex trafficking of Aboriginal girls in Canada uses this definition of trafficking: "This paper draws upon the trafficking definition of the United Nations Protocol to Prevent, Suppress, and Punish Trafficking in Persons, especially Women and Children, Supplementing the United Nations Convention Against Transnational Organized Crime.

"Trafficking in Persons shall mean the recruitment, transportation, transfer, harboring, or receipt of persons, by means of threat or use of force or other forms of coercion, of

abduction or fraud, of deception, of the abuse of power of a position of vulnerability or of the giving or receiving of payment or benefits to achieve the consent of a person having control over other persons, for the purpose of exploitation. Exploitation shall include, at a minimum, the exploitation of the prostitution of others or other forms of sexual exploitation, forced labor or services, slavery or practices similar to slavery, servitude or the removal of organs" (Sethi, 2020).

A study out of the University of Montreal has identified that there are some weaknesses in the application of human trafficking laws in Canada, as can be observed by the following quote "Canada has adopted a definition of human trafficking very similar to that of the United Nations. However, in its application, Canada is stricter than the Trafficking Protocol. It has been established that under the protocol, a child cannot consent to economic migration, trafficking or smuggling. However, in several Canadian decisions.....were not considered as victims of trafficking..... Thus, Canada contradicts the Trafficking Protocol and risks causing secondary victimization of children, as they will be deprived of protection and assistance measures intended for victims of trafficking" (Jimenez, 2011). This same study considers "As "practices analogous to slavery", are considered:.....the... transfer of minors...deprivation of liberty, segregation" (Jimenez, 2011).

Another study identifies the publication ban on race based data as an obstacle to under enforcement of non-whites as victims and over enforcement of criminal suspects. "In Canada, there are persistent allegations and some empirical evidence suggesting racialized police bias; certain (non-White) groups appear to face over-enforcement

as criminal suspects and under-enforcement as victims. Yet, it is challenging to prove or disprove these claims. Unlike other countries, where governments routinely publish police-reported crime and criminal court data identifying the race/ethnicity of criminal suspects and victims, Canada maintains a ban on the publication of such data" (Millar & O'Doherty, 2020).

Based on the three orders made in the previous section discussing fraud, it can be determined that a reasonable person would conclude that exploitation has occurred. No reasonable person would conclude that a court should commit fraud to give custody of a child. No reasonable person would conclude that the Attorney General of Canada should use the fraud committed in a court in one jurisdiction to prevent the release of a child who is being exploited to conceal and facilitate crime. The safety of numerous people would be in jeopardy if Karis Kenna Nicole Richardson did not provide the service of shielding crimes of multiple persons. While Karis is unaware of the service she is providing to conceal crime a reasonable person would conclude that she is the mechanism by which crime is being shielded and the DIV 70 of 2020 orders are evidence of this service.

COMPARISON BETWEEN UNWARRANTED INTERFERENCE WITH KAYSHA IN 1997 AND KARIS IN 2020

There are several associations between the unwarranted intervention in 1997 and 2020. No reason was ever articulated in any manner to demonstrate that there was any legitimate reason for the removal of Karis or Kaysha. Justice R.W. Elson simply stating that he is "satisfied" that the interim order should issue does not articulate why the child

should be removed from parental custody. Part III of the Family Property Act (SK) deals with possession of the family home and property. Section 22 dealing with the distribution of property is even more stringent. The application that was submitted for a first appearance demonstrates intent to abuse the Court of Queen's Bench for Saskatchewan in a manner that is prohibited by a plain reading of the Family Property Act (SK):

> 7 In exercising its powers pursuant to this Part, the court shall have regard to:
>
> (a) the needs of any children;
>
> (b) the conduct of the spouses towards each other and towards any children;
>
> (c) the availability of other accommodation within the financial means of either spouse;
>
> (d) the financial position of each spouse;
>
> (e) any interspousal contract or, where the court thinks fit, any other written agreement between the spouses
>
> (f) any order made by a court of competent jurisdiction before or after the coming into force of this Act or The Miscellaneous Statutes (Domestic Relations) Amendment Act, 2001 (No. 2) with respect to the distribution or possession of family property or the maintenance of one or both of the spouses or with respect to the custody or maintenance of any children; and
>
> (g) any other relevant fact or circumstance

For the purposes of his fiat, none of these matters were addressed in the orders even though they were required to be addressed in the division of property. Furthermore, the division of property could never have taken place on a first appearance with no evidence from the defendant in that matter. Even in an uncontested matter an order could not be

given to sell the property in which the defendant was living in, nor without accounting for the availability of accommodation within the means of the other spouse. Most importantly the needs of the child and then the conduct of the spouses towards each other and towards the children, and any other relevant fact or circumstance. The removal of Karis should have had some written justification for her removal, yet there was none.

The Application can be viewed in Figures 17-20. This is on a first appearance, and this lack of written justification for the issuance of the interim orders issued is consistent with the lack of justification of removal of Kaysha in 1997 by Winnipeg Child and Family Services. It is noted that the fiat shown in Figure 21: Fiat DIV 70 of 2020 July 23, 2020 does not have any of the required criteria listed for the sale of the property. It is a clear demonstration of no reasoning for the removal of the child or the distribution of property. This association is tied to the 1997 removal. The unwarranted removal against the law is an example of extreme discrimination as well. However there is further examples of discrimination. The aforementioned Application contains language to settle the entire divorce on a first appearance. This is completely unreasonable and the document should have never been accepted by the court. Patricia J. Meiklejohn used rule 10-46(1)(2), and 10-47 to justify the sale of the property.

COURT FILE NUMBER DIV NO. 70 OF 2020

COURT OF QUEEN'S BENCH FOR SASKATCHEWAN
(FAMILY LAW DIVISION)

JUDICIAL CENTRE BATTLEFORD

PETITIONER KIMBERLEY ANNE RICHARDSON

RESPONDENT DALE JAMES RICHARDSON

NOTICE OF APPLICATION

NOTICE TO THE RESPONDENT, Dale James Richardson,

This application is brought by the Petitioner, Kimberley Anne Richardson. You are the Respondent.

You have the right to state your side of this matter before the Court. To do so, you must be in Court when the application is heard as shown below:

Where:	Via Telephone
Date:	July 23,2020
Time:	10:00 a.m.

Remedy sought:

1. An Order that the Petitioner, Kimberley Anne Richardson, and the Respondent, Dale James Richardson, have joint custody of the child, Karis Kenna Nicole Richardson, born February 9, 2019
2. An Order that with primary residence of the child, Karis Kenna Nicole Richardson, born February 9, 2019 shall be with the Petitioner, Kimberly Anne Richardson.
3. An Order that the Respondent, Dale James Richardson, have supervised specified access to the child, Karis Kenna Nicole Richardson, born February 9, 2019.
4. An Order that the Respondent is prohibited from the use or consumption of alcohol and/or non-prescription drugs while the child, Karis Kenna Nicole Richardson is in his care or in his presence.

Figure 17: Notice of Application DIV 70 of 2020 P1

5. An Order that the child, Karis Kenna Nicole Richardson, born February 9, 2019, shall remain resident in the Province of Saskatchewan.

6. An Order that neither the Petitioner nor the Respondent shall leave the Province of Saskatchewan with the child, Karis Kenna Nicole Richardson, born February 9, 2019, for any period of time without the written advance consent of the other party or Order of the court.

7. An Order that the child, Karis Kenna Nicole Richardson, born February 9, 2019 shall not be left alone in the care of Kaysha Faith Neasha Richardson born March 16, 1997.

8. An Order the Respondent provide financial disclosure pursuant to the requirements of the Federal Child Support Guidelines.

9. An Order that the Petitioner, Kimberly Anne Richardson, have exclusive possession of the family home and household goods.

10. In the alternative, an order that the Respondent pay the expenses related to the family home, including but not limited to the mortgage, taxes, utilities and insurance.

11. An order directing that the rental income be received by the Petitioner, Kimberley Anne Richardson or in the alternative, that the rent be paid directly to the Innovation Credit Union on account of the parties' mortgage.

12. Further, or in the alternative, and Order for the listing for sale with a registered Real Estate Broker, and sale, of the family home located at 1292 95th Street North Battleford, Saskatchewan, Surface Parcel #153874659.

13. An Order that the Net Sale Proceeds be held in trust by counsel for the Petitioner or alternatively that the Net Sale Proceeds be paid into Court to the credit of this action.

14. Further, or in the alternative, an order that the Respondent return of to Petitioner the Petitioner's personal belongings, forthwith.

15. An Order that The Respondent shall not molest, annoy, harass, communicate with or otherwise interfere with the Petitioner, Kimberly Anne Richardson.

16. An Order that costs of this application be paid to the Petitioner, Kimberley Anne Richardson.

Grounds for claim:

17. It is in the best interest of the child to remain in the full-time care of the Petitioner. The Petitioner has been the primary caregiver of the child since birth.

Page 2 of 4

Figure 18: Notice of Application DIV 70 of 2020 P2

18. The Respondent's recent behaviour and history with addictions and mental health issues together causes concern with respect to the Respondent's capacity to safely parent his young daughter without supervision.

19. The Petitioner requires the home and household goods in order to care for the child and assure that their needs are met.

20. The Respondent is occupying the family home without covering the costs associated with maintaining the expenses related to the family home.

21. The Petitioner will lose her employment if her debts go into default.

22. Pursuant to Section 5 and Section 6 of *The Family Property Act.*

23. Pursuant to Section 23 of the *Children's Law Act, 1997*

24. Pursuant to Sections 26(3)(c) and 26(3)(d) of *The Family Property Act,* which gives the Court the power to order sale of family property and the authority to prescribe the terms and conditions of sale so ordered.

25. Pursuant to Rules 10-46(1), 10-46(2) and 10-47 of *The Queen's Bench Rules of Court,* which empowers the court on a chambers application to order sale of real property where necessary or expedient.

26. Pursuant to Part 11 of the Rules of Court, awarding and fixing costs of this application by the Court to be paid to the Petitioner.

Affidavit or other evidence to be used in support of this application:

27. Affidavit of Kimberley Anne Richardson, sworn June 28, 2020.

28. The Pleadings and Proceedings, all filed; and

29. Any further material that counsel may advise and this Honourable Court may allow.

NOTICE

If you wish to oppose the application, you or your lawyer must prepare an affidavit in response, serve a copy at the address for service given at the end of this document, and file it in the court office, with proof of service, at least 7 days before the date set for hearing the application. You or your lawyer must also come to court for the hearing of the application on the date set.

TAKE NOTICE that whether or not you oppose this application, you must serve and file a Financial Statement in Form 15-26A at least 7 days before the date set for hearing the application. If this application includes a claim for child support, and you do not comply with

Page 3 of 4

Figure 19: Notice of Application DIV 70 of 2020 P3

this notice or the Notice to File Income Information which has also been served on you, THE COURT MAY IMPUTE INCOME TO YOU AND MAY DETERMINE THE AMOUNT OF CHILD SUPPORT PAYABLE ON THE BASIS OF THAT IMPUTED INCOME. If you have been served with a application for child support, please consult the Federal Child Support Guidelines.

AND FURTHER TAKE NOTICE that if you do not appear at the hearing (or fail to provide the required financial information) an order may be made in your absence and enforced against you. YOU WILL NOT RECEIVE FURTHER NOTICE OF THIS APPLICATION.

DATED at North Battleford, Saskatchewan, this 30th day of June, 2020.

MATRIX LAW GROUP
Per:

Patricia J. Meiklejohn
Solicitors for the Petitioner

CONTACT INFORMATION AND ADDRESS FOR SERVICE
Matrix Law Group; Attn: Patricia J. Meiklejohn; 1421 101st Street, North Battleford SK S9A 1A1
Telephone number: (306) 445-7300; Fax number: (306) 445-7302; Email Address: patriciam@matrixlawgroup.ca;
File Number: 63095-412 PJM

Figure 20: Notice of Application DIV 70 of 2020 P4

JUDICIAL CENTRE OF BATTLEFORD

DIV 70/20
7764

KIMBERLEY RICHARDSON v. DALE RICHARDSON

pgl 1

Date	Nature of Order	Judge

July 22/20 Olson, J.
P. Meikle-John - telephone
no one for respondent.
Reserved - pending information from Ms. Meikle-John.

K. Weisgerber

July 23, 2020.
Counsel for the petitioner has provided the Court with his client's estimate of the amount of equity in the family home, roughly between $5000 and $12,000. With that information, I am satisfied that the interim draft order should issue. The order includes authorization for the petitioner to list and sell the home, followed by an accounting of the proceeds.
The only thing that should be included in the interim order is that the issue of parenting to be reviewed in one month's time. That should occur on August 27, 2020.

E. Olson J.

Counsel Notified Copies Provided
Date: JUL 23 2020
Signed: K. Weisgerber

Figure 21: Fiat DIV 70 of 2020 July 23, 2020

DIVISION 6
Sale of Land and Partition

Court may order sale of real property

10-46(1) If in any cause or matter relating to real property the Court considers it necessary or expedient that all or any part of the real property should be sold, the Court may order the real property to be sold.

(2) Any party who is bound by an order pursuant to this rule and who possesses the real property, or is in receipt of the rents and profits of the real property, must deliver up the possession or receipt to:

(a) the purchaser; or

(b) any other person named in the order.

Manner of carrying out sale, mortgage, etc., when ordered by Court

10-47(1) If a sale, mortgage, partition or exchange of real property is ordered, the Court may, in addition to any other power it has, authorize the sale, mortgage, partition or exchange to be carried out:

(a) by laying proposals before the judge in chambers for his or her sanction; or

(b) subject to subrule (3), by proceedings out of Court.

(2) Any moneys resulting from the sale, mortgage, partition or exchange must be paid into Court or to trustees, or otherwise dealt with as the judge in chambers may order.

(3) The judge in chambers shall not authorize proceeding out of Court, unless the judge is satisfied by evidence that the judge considers sufficient that all persons interested in the real property to be sold, mortgaged, partitioned, or exchanged:

(a) are before the Court; or

(b) are bound by the order for sale, mortgage, partition or exchange.

(4) Every order authorizing proceedings out of Court must contain:

(a) a declaration that the chambers judge is satisfied as required by subrule (3); and

(b) a statement of the evidence on which the declaration is made.

(5) For the purposes of this rule:

(a) an order nisi for sale of land subject to a non-matured mortgage is to be in Form 10-47A;

(b) an order nisi for sale of land subject to a matured or demand mortgage is to be in Form 10-47B;

Figure 22: Queen's Bench Rules SK 10-46, 10-47

(c) an order nisi for sale of land subject to a non-matured mortgage by real estate listing is to be in Form 10-47C;

(d) an order nisi for sale of land subject to a matured or demand mortgage by real estate listing is to be in Form 10-47D; and

(e) an order confirming sale is to be in Form 10-47E.

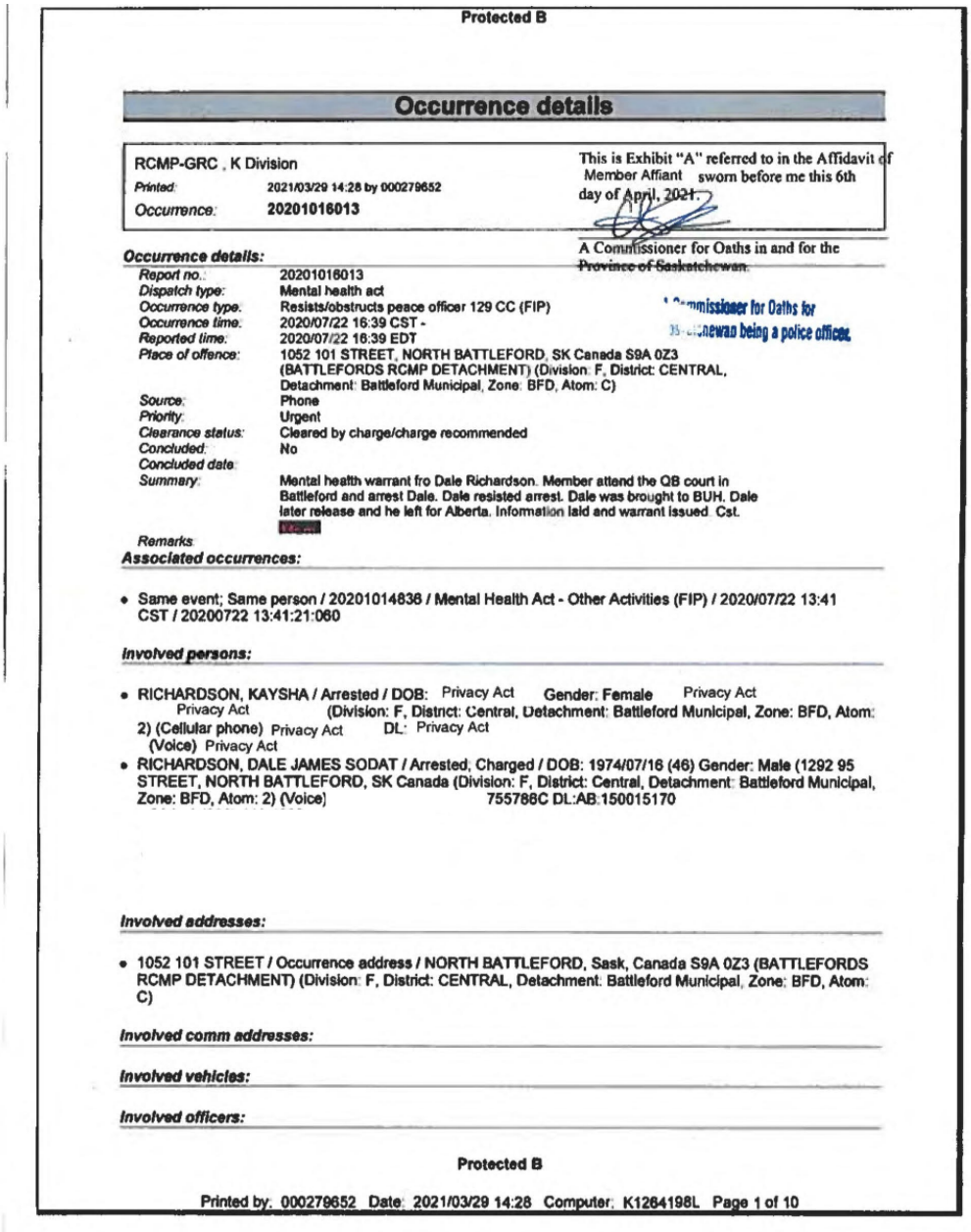
(6) The applicant for an order under this rule shall file a draft order in the applicable form, with all additions, insertions and changes underlined.

Amended. Gaz. 15 Jly. 2016.

Figure 23: Queens Bench Rules SK 10-47 Con't

EXAMPLE OF DISCRIMINATION/BIAS

Justice R.W. Elson based on the testimony of unknown members of the Royal Canadian Mounted Police directed them to keep Dale J. Richardson out of the Court of Queen's Bench for Saskatchewan on July 22, 2020 when there were two hearings he was scheduled to appear on. DIV 70 of 2020 and QBG 156-2020.



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Occurrence details

RCMP-GRC , K Division

Printed: 2021/03/29 14:28 by 000279652

Occurrence: 20201016013

This is Exhibit "A" referred to in the Affidavit of Member Affiant sworn before me this 6th day of April, 2021.

A Commissioner for Oaths in and for the Province of Saskatchewan.

Commissioner for Oaths for Saskatchewan being a police officer.

Occurrence details:

Report no.:	20201016013
Dispatch type:	Mental health act
Occurrence type:	Resists/obstructs peace officer 129 CC (FIP)
Occurrence time:	2020/07/22 16:39 CST -
Reported time:	2020/07/22 16:39 EDT
Place of offence:	1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)
Source:	Phone
Priority:	Urgent
Clearance status:	Cleared by charge/charge recommended
Concluded:	No
Concluded date:	
Summary:	Mental health warrant fro Dale Richardson. Member attend the QB court in Battleford and arrest Dale. Dale resisted arrest. Dale was brought to BUH. Dale later release and he left for Alberta. Information laid and warrant issued. Cst. [redacted]
Remarks:	

Associated occurrences:

- Same event; Same person / 20201014836 / Mental Health Act - Other Activities (FIP) / 2020/07/22 13:41 CST / 20200722 13:41:21:060

Involved persons:

- RICHARDSON, KAYSHA / Arrested / DOB: Privacy Act Gender: Female Privacy Act Privacy Act (Division: F, District: Central, Detachment: Battleford Municipal, Zone: BFD, Atom: 2) (Cellular phone) Privacy Act DL: Privacy Act (Voice) Privacy Act
- RICHARDSON, DALE JAMES SODAT / Arrested, Charged / DOB: 1974/07/16 (46) Gender: Male (1292 95 STREET, NORTH BATTLEFORD, SK Canada (Division: F, District: Central, Detachment: Battleford Municipal, Zone: BFD, Atom: 2) (Voice) 755788C DL:AB:150015170

Involved addresses:

- 1052 101 STREET / Occurrence address / NORTH BATTLEFORD, Sask, Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)

Involved comm addresses:

Involved vehicles:

Involved officers:

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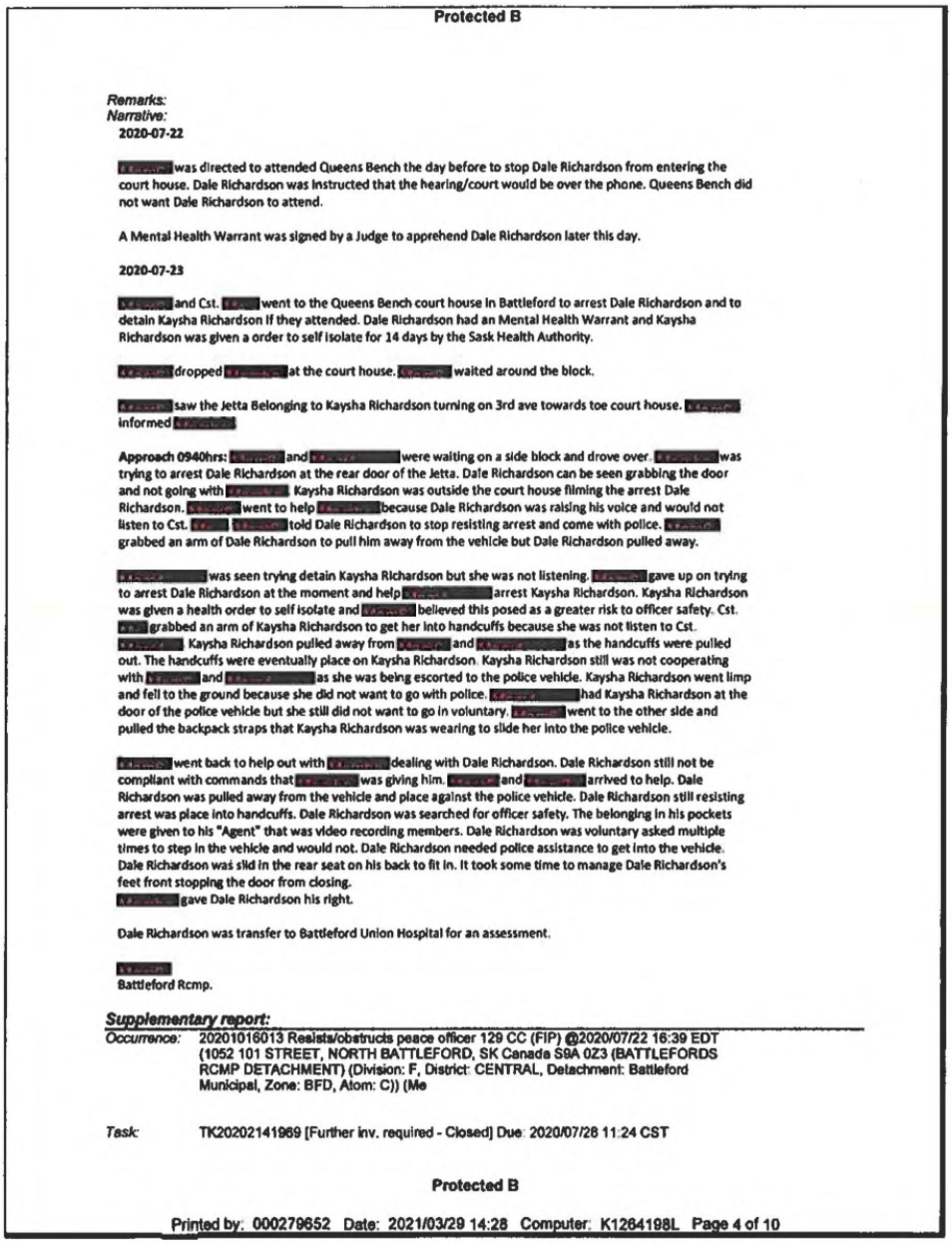
Printed by: 000279652 Date: 2021/03/29 14:28 Computer: K1264198L Page 1 of 10

Figure 24: Fraudulent RCMP Warrant Redacted P1

There are several issues with the first page of the warrant (See Figure 24: Fraudulent RCMP Warrant Redacted P1). Notably it states that a warrant for resisting arrest was issued on July 22, 2020 for arrest that took place on July 23, 2020. This confirmation is



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Remarks:
Narrative:
2020-07-22

[redacted] was directed to attended Queens Bench the day before to stop Dale Richardson from entering the court house. Dale Richardson was instructed that the hearing/court would be over the phone. Queens Bench did not want Dale Richardson to attend.

A Mental Health Warrant was signed by a Judge to apprehend Dale Richardson later this day.

2020-07-23

[redacted] and Cst. [redacted] went to the Queens Bench court house in Battleford to arrest Dale Richardson and to detain Kaysha Richardson if they attended. Dale Richardson had an Mental Health Warrant and Kaysha Richardson was given a order to self isolate for 14 days by the Sask Health Authority.

[redacted] dropped [redacted] at the court house. [redacted] waited around the block.

[redacted] saw the Jetta Belonging to Kaysha Richardson turning on 3rd ave towards toe court house. [redacted] informed [redacted]

Approach 0940hrs: [redacted] and [redacted] were waiting on a side block and drove over. [redacted] was trying to arrest Dale Richardson at the rear door of the Jetta. Dale Richardson can be seen grabbing the door and not going with [redacted]. Kaysha Richardson was outside the court house filming the arrest Dale Richardson. [redacted] went to help [redacted] because Dale Richardson was raising his voice and would not listen to Cst. [redacted] [redacted] told Dale Richardson to stop resisting arrest and come with police. [redacted] grabbed an arm of Dale Richardson to pull him away from the vehicle but Dale Richardson pulled away.

[redacted] was seen trying detain Kaysha Richardson but she was not listening. [redacted] gave up on trying to arrest Dale Richardson at the moment and help [redacted] arrest Kaysha Richardson. Kaysha Richardson was given a health order to self isolate and [redacted] believed this posed as a greater risk to officer safety. Cst. [redacted] grabbed an arm of Kaysha Richardson to get her into handcuffs because she was not listen to Cst. [redacted]. Kaysha Richardson pulled away from [redacted] and [redacted] as the handcuffs were pulled out. The handcuffs were eventually place on Kaysha Richardson. Kaysha Richardson still was not cooperating with [redacted] and [redacted] as she was being escorted to the police vehicle. Kaysha Richardson went limp and fell to the ground because she did not want to go with police. [redacted] had Kaysha Richardson at the door of the police vehicle but she still did not want to go in voluntary. [redacted] went to the other side and pulled the backpack straps that Kaysha Richardson was wearing to slide her into the police vehicle.

[redacted] went back to help out with [redacted] dealing with Dale Richardson. Dale Richardson still not be compliant with commands that [redacted] was giving him. [redacted] and [redacted] arrived to help. Dale Richardson was pulled away from the vehicle and place against the police vehicle. Dale Richardson still resisting arrest was place into handcuffs. Dale Richardson was searched for officer safety. The belonging in his pockets were given to his "Agent" that was video recording members. Dale Richardson was voluntary asked multiple times to step in the vehicle and would not. Dale Richardson needed police assistance to get into the vehicle. Dale Richardson was slid in the rear seat on his back to fit in. It took some time to manage Dale Richardson's feet front stopping the door from closing.
[redacted] gave Dale Richardson his right.

Dale Richardson was transfer to Battleford Union Hospital for an assessment.

[redacted]
Battleford Rcmp.

Supplementary report:

Occurrence: 20201016013 Resists/obstructs peace officer 129 CC (FIP) @2020/07/22 16:39 EDT (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Me

Task: TK20202141969 [Further inv. required - Closed] Due: 2020/07/28 11:24 CST

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Printed by: 000279652 Date: 2021/03/29 14:28 Computer: K1264198L Page 4 of 10

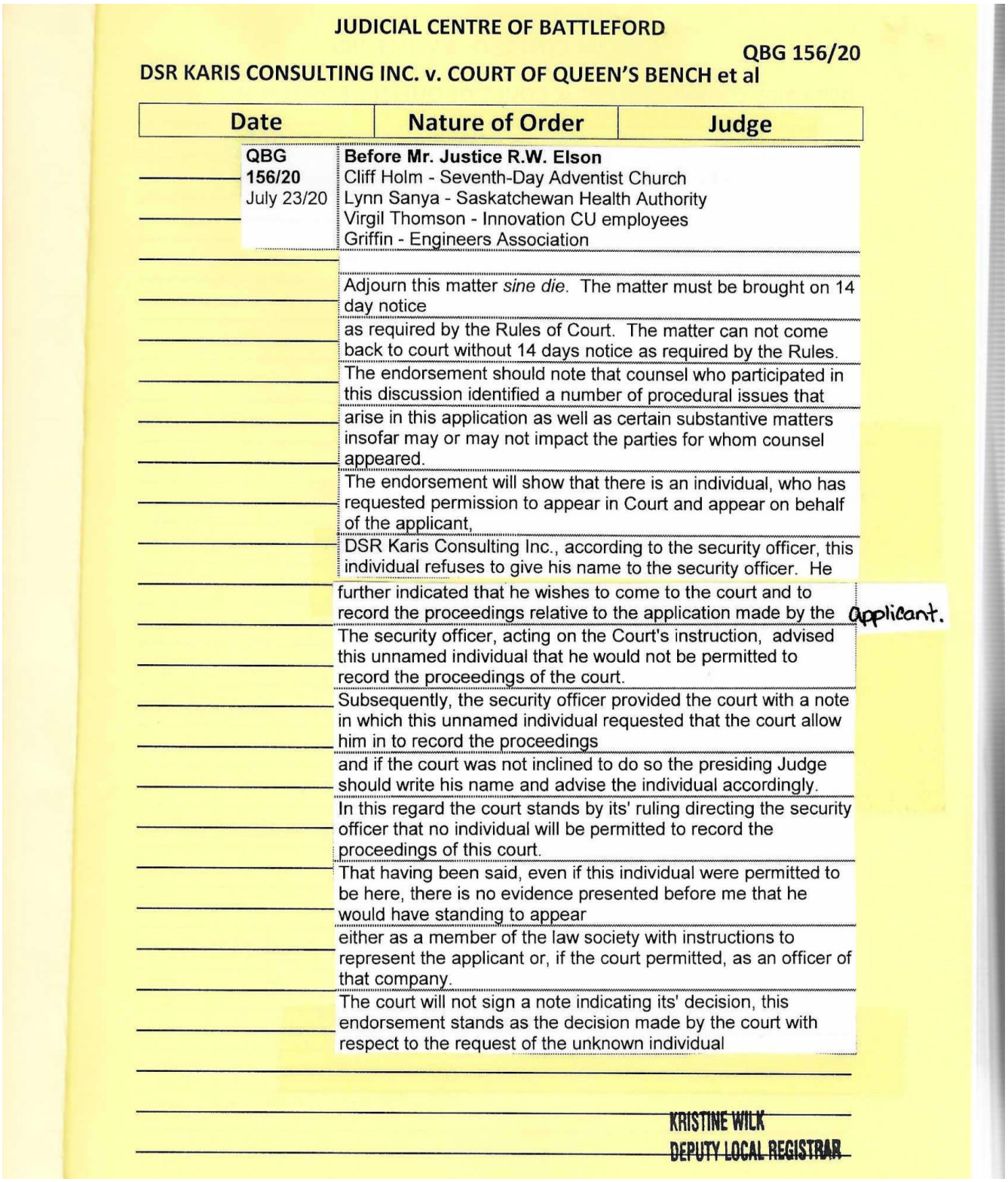
Figure 25: Fraudulent RCMP Warrant P4

shown in Figure 25: Fraudulent RCMP Warrant P4. The direction given by the Court of Queen's Bench for Saskatchewan to the unknown member of the RCMP to prevent Dale

J. Richardson from entering the court. Since it is impossible to issue a warrant for resisting arrest the day before an arrest happens, this is a demonstration of extreme bias, and is further compounded by the fact that the court makes no mention that they knew that Dale J. Richardson was prevented from entering the court at Court of Queen's Bench for Saskatchewan's direction. This assertion is confirmed by the presence of the Court Sheriff at the time of the arrest who did not alert the Court knowing that he prevented Dale J. Richardson from entering the court on July 23, 2020 (See Figure 26: Court Sheriff Participating in July 23, 2020 Abduction of Dale and Kaysha).

Figure 26: Court Sheriff Participating in July 23, 2020 Abduction of Dale and Kaysha

These are all critical facts that were left off of the fiat for DIV 70 of 2020. This demonstrates extreme bias towards Dale J. Richardson. This bias demonstrates a stronger association to the bias described in the unlawful state interference with Kaysha in 2001. This bias is observed when examining the fiat for QBG 156 of 2020.



JUDICIAL CENTRE OF BATTLEFORD

QBG 156/20

DSR KARIS CONSULTING INC. v. COURT OF QUEEN'S BENCH et al

Date	Nature of Order	Judge
QBG 156/20 July 23/20	**Before Mr. Justice R.W. Elson** Cliff Holm - Seventh-Day Adventist Church Lynn Sanya - Saskatchewan Health Authority Virgil Thomson - Innovation CU employees Griffin - Engineers Association Adjourn this matter *sine die*. The matter must be brought on 14 day notice as required by the Rules of Court. The matter can not come back to court without 14 days notice as required by the Rules. The endorsement should note that counsel who participated in this discussion identified a number of procedural issues that arise in this application as well as certain substantive matters insofar may or may not impact the parties for whom counsel appeared. The endorsement will show that there is an individual, who has requested permission to appear in Court and appear on behalf of the applicant, DSR Karis Consulting Inc., according to the security officer, this individual refuses to give his name to the security officer. He further indicated that he wishes to come to the court and to record the proceedings relative to the application made by the Applicant. The security officer, acting on the Court's instruction, advised this unnamed individual that he would not be permitted to record the proceedings of the court. Subsequently, the security officer provided the court with a note in which this unnamed individual requested that the court allow him in to record the proceedings and if the court was not inclined to do so the presiding Judge should write his name and advise the individual accordingly. In this regard the court stands by its' ruling directing the security officer that no individual will be permitted to record the proceedings of this court. That having been said, even if this individual were permitted to be here, there is no evidence presented before me that he would have standing to appear either as a member of the law society with instructions to represent the applicant or, if the court permitted, as an officer of that company. The court will not sign a note indicating its' decision, this endorsement stands as the decision made by the court with respect to the request of the unknown individual KRISTINE WILK DEPUTY LOCAL REGISTRAR	

Figure 27: QB 156 of 2020 Fiat July 23, 2020 (SK)

The fiat shown in Figure 27: QB 156 of 2020 Fiat July 23, 2020 (SK) again makes no mention of the fact that Dale J. Richardson was prevented from entering the court that

day even though the Court of Queen's Bench for Saskatchewan sheriff is clearly seen in the photograph with Dale J. Richardson during his unlawful abduction. Keep in mind there was a resisting arrest warrant issued on July 22, 2020 for that “arrest” noted in the aforementioned figure that took place on July 23, 2020, making the entire arrest unlawful, however there are more points that will be discussed in a future study. For the sake of the conciseness of the preliminary report the other facts surrounding this will be over looked.

The same mockery of Dale J. Richardson about conspiracy and interpreting everything that he has done in a negative light to fit the “narrative” constructed is easily observed when examining the plethora of evidence and the orders made by the judges in all three populations of court cases. It is clear from the figures listed in the statistical analysis section that what has happened is impossible without a conspiracy to at the very least obstruct and defraud Dale J. Richardson. This assertion is made by observing the evidence provided by the defendants and the judiciary in the various court hearings.

OVERLOOKING VIOLENCE AND NEGATIVE ACTIONS OF OPPOSING PARTIES TOWARDS DALE

From the fact that the petitioner in DIV 70 of 2020 and the defendants in QBG 156 of 2020 were all tied to the file numbers for the crimes shown in Figure 28: RCMP Cst. Roy Bringing File Numbers for Torture and Criminal Negligence, makes RCMP members and other persons conspirators to preventing the enforcement of the CONVENTION AGAINST TORTURE AND OTHER CRUEL,INHUMAN OR DEGRADING TREATMENT OR PUNISHMENT. Instead of investigating torture which is of a greater torture and the criminal negligence tied to evidence discussed earlier insignificance, it

was ignored and favour was given to all of the parties implicated in this report.

Figure 28: RCMP Cst. Roy Bringing File Numbers for Torture and Criminal Negligence

Even if there was a valid resist arrest warrant, it is not of a greater public interst to execute that warrant over criminal negligence that involves the distribution of a biological weapon that has interfered with the territorial integrity of Canada and the United States. When considering that torture investigations of both Dale J. Richardson and Karis existed long before any “warrant” for resist arrest and the grave public interest of the criminal negligence complaints that have now resulted in death, it is extremely unlikely that this was just a gross error. In fact it is statistically improbable that it was an error as the qualitative interpretation of the data even with the most conservative interpretation strongly suggests foul play. This overlooking the of negative actions towards Dale exists in all cases.

The actions of any professional who gave evidence that substantiated any claim made by Dale has been completely disregarded. This is consistent with the issues raised in the letters to Winnipeg Child and Family Services written by Dale in 2001. The attacks made by numerous members of the judiciary on medical professionals who disregarded the “narrative” placed forth who share the same ideology as those who unlawfully interfered with Kaysha in 1997 are clearly seen. This further association is a compelling demonstration of a strong correlation.

The unlawful restraint of a child is extremely provoking in nature. The interim order dated July 23, 2020 is an extreme form of provocation as is every step to prevent Dale to exercise his lawful rights to undo the unlawful interference with Karis. The evidence presented suggests that the trafficking of the child has been to provoke Dale to substantiate the “narrative” put forth and to frustrate his attempts to avail himself from illness when seeking medical treatment from his family doctor. It is unreasonable to

assume that a person would incur over $10,000.00 as a student and drop school when they have carried a 4.0 GPA the previous two semesters just to harass other people.

The main outlier between the two instances of unwarranted state interference into the

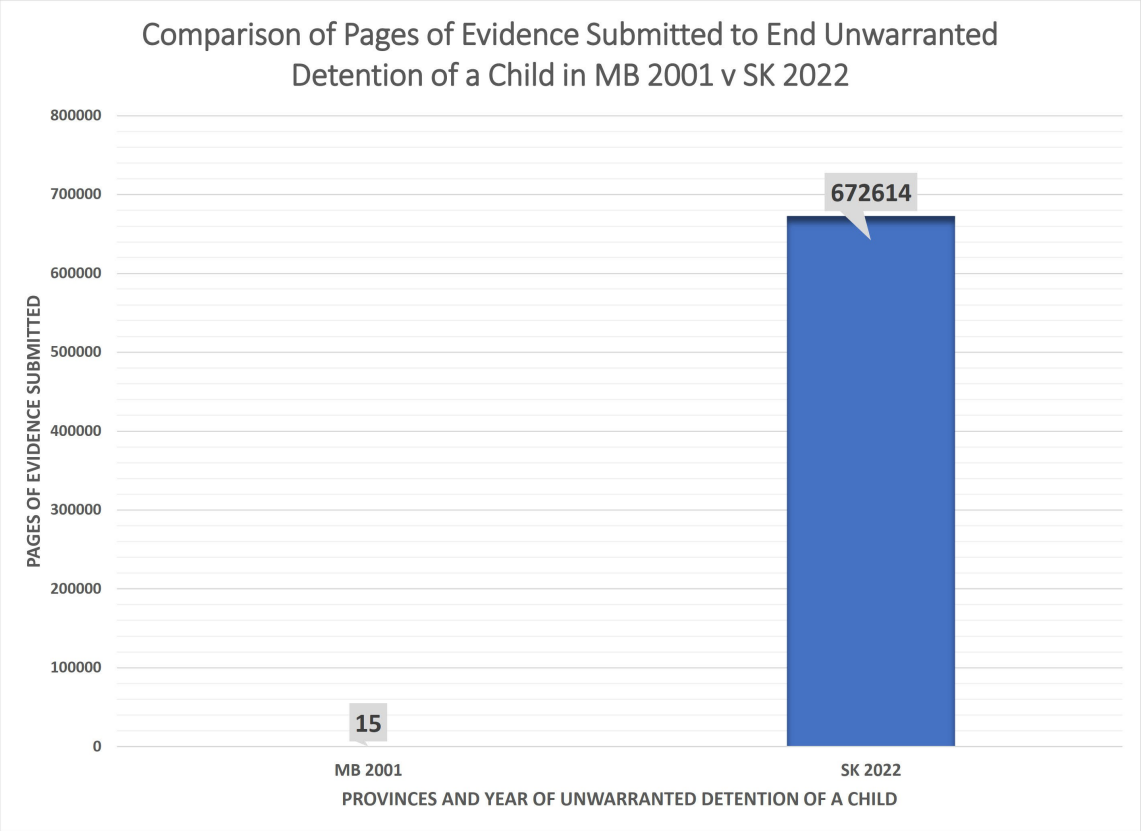


Table 8: Comparison of Pages of Evidence Submitted to End Unwarranted Detention of A Child in MB 2001 v SK 2022

parent child relationship examined in the judicial system is the amount of work done by Dale to produce a desired outcome.

The large discrepancy between the amount of pages of evidence to end the unwarranted detention of a child in Manitoba in 2001 vs Saskatchewan in 2022 is staggering. As of May 30, 2022 there was 672,614 pages of evidence relating to the release of Karis which has provided no positive results whatsoever. Conversely, in Manitoba in 2001 15 pages of written evidence was enough to get Winnipeg Child and Family Services to rescind the permanent order and grant custody to Dale. The main difference between the

unwarranted removal of the child in 1997 and 2020 was the engineering report that outlined bio-terrorism. This 4,484,093% increase in pages of evidence provided is an astronomical increase in the amount of effort put in to free a child from unwarranted detention and it is statistically impossible to have produced a 100% failure rate. This statistic alone warrants further investigation as it is of extreme significance. The costs of processing this information alone is astronomical. The fee estimate provided by the Ministry of Justice (SK) from an access to information request at $15.00 per half an hour was $504,690.00 as can be seen in Figure 29: JU 023-22 Fee Estimate Template (SK).

ACCESS TO INFORMATION FEE ESTIMATE

FILE NUMBER: JU 023-22P
DATE OF ESTIMATE: 5/30/2022
PREPARED BY:

Description	Total # Pages	Time (in hours)			Total Cost
Computer printout/document copy (pages)	672,614	NA	X	$0.25 per page	$0.00
Document Search and Retrieval for electronic records		9.5	X	$15.00 per half hour	$285.00
Document Search and Retrieval for paper records		0.5	X	$15.00 per half hour	$15.00
Severing and Document Preparation		16815.0	X	$15.00 per half hour	$504,450.00
Additional Costs:					
Less 2 hours free search and/or preparation time		(2.0)	X	$15.00 per half hour	($60.00)
		Total Fee Estimate			**$504,690.00**
		Deposit Required 25%			$126,172.50

NOTES:
*Fee estimates are done in accordance with the *Freedom of Information and Protection of Privacy Regulations* .
Document Search and Retrieval for electronic records is calculated at 12 pages per minute divided by 60 minutes to get number of hours, or based on actual time, as reported by responsive branch/party who searched.
Document Search and Retrieval for paper records is based on actual time, as reported by responsive branch/party who searched.
Severing and document preparation is based upon 2 minutes per page that require severing, estimate 75% of all pages.
The applicant is not responsible for any additional costs not included in the estimate.
The applicant is required to pay half of the fee estimate before work will begin on the access request.
Upon completion of the access request the applicant must pay the remaining balance of the estimate.
If the actual fee of the FOI are less than estimated the applicant is only responsible for the actual fee incurred for providing access.

Figure 29: JU 023-22 Fee Estimate Template (SK)

This is an exorbitant sum of money to expend just on processing documents to prepare for a Freedom on Information request. If the time of preparing the documents was the same time that a lawyer spend reviewing the documents, which is a wholly unreasonable assumption based on the fact that it would take more time to read and review on top of sorting documents, but for the purposes of this estimate an extremely low estimate will be used to offset bias; at a $400.00 hr legal rate places the cost of reviewing the documents at $6,730,000.00. Keep in mind the petitioner in the family matter requested

to have the family home sold on a first appearance because of an inability to pay for the upkeep of the home. The home was purportedly "sold" for $170,000.00. See Table 9: Cost of Legal Fees vs Sale of Home Price (SK).

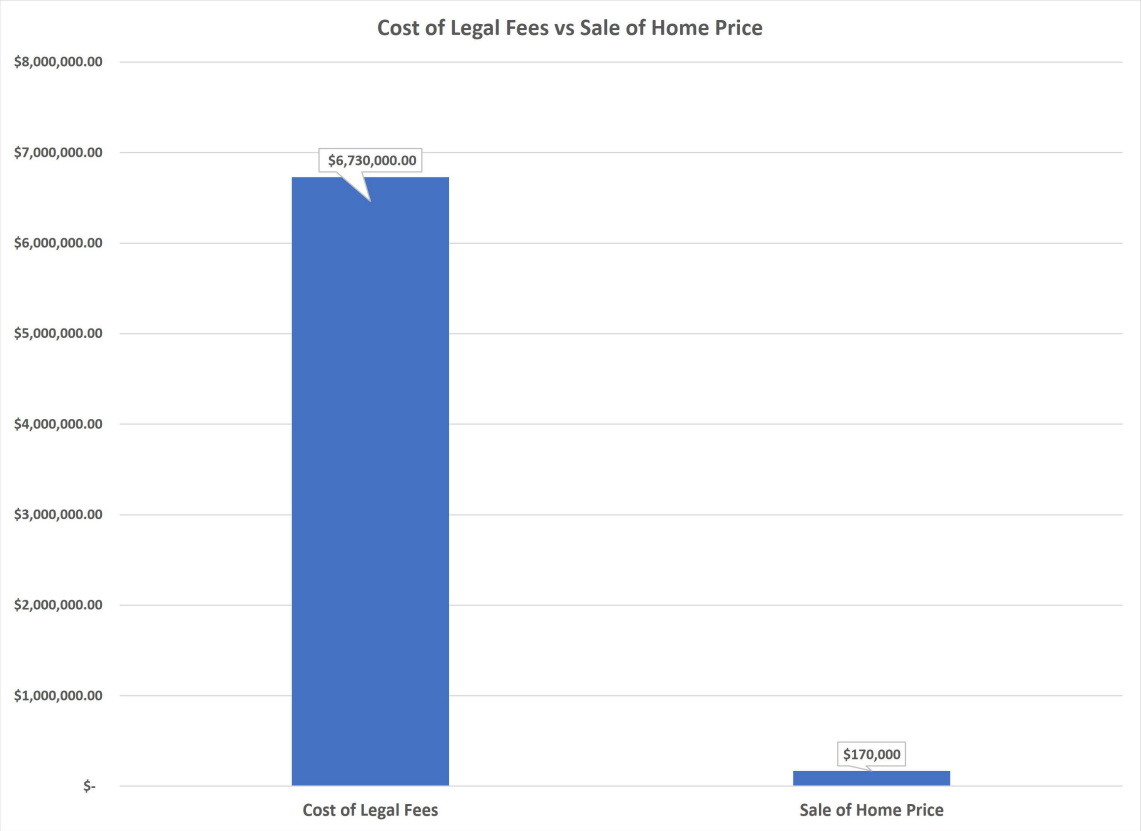


Table 9: Cost of Legal Fees vs Sale of Home Price (SK)

From a risk assessment standpoint as well as a statistical standpoint, this is a notable observation. It is not a reasonable expenditure to pay 3959% more than the value of an asset in legal fees to defend something that you say that you cannot afford. If you cannot afford to upkeep as $170,000.00 mortgage, it is impossible to pay $6,730,000.00 of legal fees. This extreme outlier demands investigation as it does not fit any reasonable expectation if the assertion was true that the house was being sold because of lack of funds to pay.

Funds to pay for an unlawful sale of the home was used from a Saskatoon Court of Queen's Bench for Saskatchewan account. The receipt is shown in Figure 30: Matrix QBSK Deposit Account Transfer DIV 70 of 2020. A Trust account was used to pay for an order for the fraudulent sale of a property. Since that account was not involved in the litigation regarding DIV 70 of 2020, it should be investigated further. It needs to be determined who deposited funds into that trust account. This could uncover the identity of the person(s) or organization or entity who may be involved in paying exorbitant amounts of money in an illogical manner.

The Cullen Report attached to the appendices of this report outlines the role of lawyers in British Columbia and their involvement in money laundering. An interesting observation has been made. The Manitoba-Saskatchewan Conference of the Seventh-Day Adventist church (“Man-Sask Conference”) is headquartered in Saskatoon and involved in several of the matters involving both the unlawful retention of the child, the engineering report and the criminal complaints started by both DSR Karis Consulting Inc. and Dale J. Richardson. In fact several of the members of the Man-Sask Conference including senior partners of Matrix Law LLP are tied to the torture and criminal negligence complaints. A look at the corporate laws governing the Man-Sask Conference demonstrate the need for further investigation. The Act governing the Man-Sask Conference are outlined in Appendix J. Most notably is that there is no control mechanism for the executive council and no clear ownership for the corporation. The author’s knowledge of organized crime dictates that this is a structure that was designed to facilitate and protect organized crime.

Court of Queen's Bench
Judicial Centre of Battleford

Receipt: BAT25109
Type: TRANSFER
Till No: 021921-KW-5318
Payor: Matrix Law Group

1421 101st Sreet
NORTH BATTLEFORD, SK, S9A 1A1
Date: 02/19/2021 2:13 PM
Comments:

DEP-SK-00046-2020
Deposit Account: Matrix Law Group et al ----Duplicate Copy----
Deposit Account
-$20.00

DIV-BF-00070-2020
Richardson, Kimberley Anne v Richardson, Dale James
Order/Judgment
$20.00

Total: $0.00

Tendered
Transfer
$0.00

Trust Balance: $890.00

Figure 30: Matrix QBSK Deposit Account Transfer DIV 70 of 2020

It should never be used in a church, and since the author grew up in the Man-Sask Conference and had no knowledge of this structure, it is probable that it was done against the will and consent of the members. It leaves the members with no power within

the corporation and presents significant religious liberty issues that are beyond the scope of this study.

DocuSign Envelope ID: 1CEF9F2F-66F8-485D-AEF4-A02227C753E4

APPLICATION AND AMENDMENT AGREEMENT
(Re: Temporary Pandemic Payment Relief – All Loans)

Innovation Credit Union (the "Credit Union") Date: June 18,2020

Loan #: 830511956138

Borrower(s):

1. Kimberley Richardson (Name) 2. Dale Richardson (Name)
3. _____ (Name) 4. _____ (Name)

Guarantor(s):

1. _____ (Name) 2. _____ (Name)
3. _____ (Name) 4. _____ (Name)

■ Loan is Current Reason for Request: **Temporary payment relief due to COVID-19**

☐ **REQUEST TO SKIP A PAYMENT(S)**

Date of First Skipped Payment: _____

Date Regular Payment Amounts Resume or Loan Expires: _____

In the event the Credit Union agrees to allow for skip payments beyond the term of the Loan, the term of the Loan is hereby extended until the Date Regular Payment Amounts Resume, at which time the entire balance of the Loan will be due and owing.

The tax component and insurance component of any skipped payment cannot be skipped and continues to be due and payable on the regularly scheduled payment date.

Interest will continue to accrue and be payable on the unpaid principal amount of the skipped payment but not on the unpaid interest.

■ **REQUEST TO CHANGE PAYMENT TO INTEREST ONLY**

Date of First Interest Only Payment: June 19, 2020

Date Regular Payment Amounts Resume or Loan Expires: Sept.11/2020

Amount of Interest Only Payments: _____ Frequency of Interest Only Payments: Bi-weekly

In the event the Credit Union agrees to allow for interest only payments beyond the term of the Loan, the term of the Loan is hereby extended until the Date Regular Payment Amounts Resume, at which time the entire balance of the Loan will be due and owing.

APPLICATION, AGREEMENT AND ACKNOWLEDGMENT

Amendment Fee: Waived by Credit Union

Service fees for processing this application and amendment will apply

Fee Charged to Account No: n/a

Figure 31: Mortgage Relief Documents June 18, 2020 #1

A certificate signed be a representative of the Credit Union setting forth the applicable Overdraft Rate at any time shall be conclusive evidence as to the said rate.

14. Where an electronic signature is available and used, the person using the electronic signature is adopting such signature and authorizes it to be attached to or associated with this document.

DocuSigned by:
0C12C8A4CD3748C...
(Borrower)

DocuSigned by:
C307B2CAEF774A3...
(Borrower)

(Borrower)

(Borrower)

The above named Guarantors acknowledge the Borrower's application to amend the Loan as set out above and acknowledge and consent to this amendment and agree that the guarantee applies and extends to this Loan as amended.

The Guarantor(s) acknowledges having read the terms and conditions herein and having received a copy of this Agreement. The Guarantor(s) hereby waives the requirement of being provided with a copy of any financing or verification statement or other registration pertaining to this Agreement or any security held for this Agreement or any renewal or discharge or any judgment or judgment renewal thereof arising from the Loan and any guarantees.

(Guarantor)

(Guarantor)

(Guarantor)

(Guarantor)

*Provide Borrower with applicable Disclosure Statement.
*Ensure current completed Anti-Money Laundering compliance on file.

Figure 32: Mortgage Relief Documents June 18, 2020 #2

DocuSign SECURED

Certificate Of Completion

Envelope Id: 1CEF9F2F66F8485DAEF4A02227C753E4
Subject: Interest Only For Mortgage
Source Envelope:
Document Pages: 3
Certificate Pages: 5
AutoNav: Enabled
EnvelopeId Stamping: Enabled
Time Zone: (UTC-06:00) Saskatchewan

Signatures: 2
Initials: 0

Status: Completed

Envelope Originator:
Dana Lavoie
PO Box 1090
Swift Current, SK S9H 3X3
Dana.Lavoie@innovationcu.ca
IP Address: 142.165.148.142

Record Tracking

Status: Original
6/18/2020 10:42:03 AM

Holder: Dana Lavoie
Dana.Lavoie@innovationcu.ca

Location: DocuSign

Signer Events	Signature	Timestamp
Dale Richardson dalejsr74@outlook.com Security Level: Email, Account Authentication (None), Access Code	DocuSigned by: Dale Richardson C507B2CAEF774A3... Signature Adoption: Pre-selected Style Using IP Address: 216.197.206.253	Sent: 6/18/2020 10:46:32 AM Viewed: 6/18/2020 11:07:02 AM Signed: 6/18/2020 11:07:41 AM
Electronic Record and Signature Disclosure: Accepted: 6/18/2020 11:07:02 AM ID: feaaa778-f9e5-4dc9-b7dc-ed7226aa9e80 Company Name: Innovation Credit Union Limited		
Kim Richardson hebertkim@hotmail.com Security Level: Email, Account Authentication (None), Access Code	DocuSigned by: 0C12C8A4CD3748C... Signature Adoption: Drawn on Device Using IP Address: 74.206.136.165 Signed using mobile	Sent: 6/18/2020 10:46:31 AM Viewed: 6/18/2020 10:54:19 AM Signed: 6/18/2020 10:55:26 AM
Electronic Record and Signature Disclosure: Accepted: 6/18/2020 10:54:19 AM ID: e9373aee-93f4-4ffb-b236-77824dca9b78 Company Name: Innovation Credit Union Limited		

In Person Signer Events	Signature	Timestamp
Editor Delivery Events	**Status**	**Timestamp**
Agent Delivery Events	**Status**	**Timestamp**
Intermediary Delivery Events	**Status**	**Timestamp**
Certified Delivery Events	**Status**	**Timestamp**
Carbon Copy Events	**Status**	**Timestamp**
Witness Events	**Signature**	**Timestamp**
Notary Events	**Signature**	**Timestamp**
Envelope Summary Events	**Status**	**Timestamps**

Figure 33: Mortgage Relief Documents June 18, 2020 #3

Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	6/18/2020 10:46:32 AM
Certified Delivered	Security Checked	6/18/2020 11:07:02 AM
Signing Complete	Security Checked	6/18/2020 11:07:41 AM
Completed	Security Checked	6/18/2020 11:07:41 AM
Payment Events	**Status**	**Timestamps**
Electronic Record and Signature Disclosure		

Figure 34: Mortgage Relief Documents June 18, 2020 #4

MORE DISCUSSION ON CRIMINAL ACTIONS IN THE CIVIL COURTS

Based on Figure 31: Mortgage Relief Documents June 18, 2020 #1 - Figure 34: Mortgage Relief Documents June 18, 2020 #4 it can be determined that on July 9, 2020 that there was no immediate risk of the property being lost and no evidence that the mortgage was in arrears. In fact the documentation demonstrated that the property was subjected to interest relief. This would not warrant any need for immediate sale even if there were lawful circumstances that would have permitted any sale. Since there was no lawful circumstances permitting this, deceiving the court and not placing this information before the court is evidence of fraud since it was withheld to perpetrate further fraud on July 23, 2020. In the sections speaking about the orders in 10-47 of the Court of Queen's Bench Rules (SK) four of them are for Nisi orders. This quote taken from the PLEA website clarifies this further. “Order Nisi - If the judge allows the foreclosure, they may still allow you more time to pay the arrears. If so, the judge gives an Order Nisi for Foreclosure. This court order is temporary and sets out the amount of time you have to pay the arrears before the judge gives the Final Order for Foreclosure. If you do not pay the arrears, the creditor can apply for a Final Order for Foreclosure” (PLEA, n.d.). Based on

this information it can be seen that the rules used in question was used specifically for properties that were in foreclosure. Since Kimberley Richardson worked in loss prevention at Innovation Credit Union and it was known to Dale J. Richardson that she had attended court for the foreclosure of properties, it is a reasonable conclusion that she understood that Orders Nisi were for properties being foreclosed and was aware that she was committing fraud when she signed the documents and read the orders. It is also reasonable to conclude that every judge, lawyer and registry agent that saw the July 23, 2020 order was aware that it was a fraudulent order and rather than report it, proceeded to cover up the fraud. That is evidence of conspiracy. It is wholly unreasonable that multiple courts in multiple jurisdictions would cover up fraud in another court as this carries considerable risk and a tremendous amount of resources to do so in multiple jurisdictions. Based on the actions of Justice Zuk who authorized the August 9, 2022 Judgment and committed fraud to cover up fraud and conspiracy to commit fraud, it is reasonable to conclude that the other judges having a high number of appearances were in that position to cover fraud as well. The actions of Associate Chief Justice Rooke in following any evidence submitted by Dale J. Richardson with relation to the engineering report that delineated the critical weakness introduced into the infrastructure of Canada and the United States and removing it from the record, committing fraud, punishing Dale and other people associated with him even persons who had no involvement with the matters demonstrates intimidation. Additional information regarding the actions of Associate Chief Justice Rooke can be found in Appendix M.

From examining the execution of the fraud observed in the three court actions in DIV 70 of 2020 and the Application submitted by Kimberley Richardson and her counsel Patricia

J. Meiklejohn and the three judges and two registry agents over a span of over 2 years this group fits the description of a criminal organization in section 467.1(1) of the Criminal Code:

> **Definitions**
>
> 467.1 (1) The following definitions apply in this Act.
>
> ***criminal organization*** means a group, however organized, that
>
> > (a) is composed of three or more persons in or outside Canada; and
> >
> > (b) has as one of its main purposes or main activities the facilitation or commission of one or more serious offences that, if committed, would likely result in the direct or indirect receipt of a material benefit, including a financial benefit, by the group or by any of the persons who constitute the group.
>
> It does not include a group of persons that forms randomly for the immediate commission of a single offence.
>
> (organisation criminelle)
>
> ***serious offence*** means an indictable offence under this or any other Act of Parliament for which the maximum punishment is imprisonment for five years or more, or another offence that is prescribed by regulation. (infraction grave)

Torture and child trafficking were directly tied to the commission of the fraud over $5,000.00 there are several serious offences with maximum punishments well over 5 years. Torture carries a 14 year maximum sentence and trafficking of a person under the age of eighteen years carries a 14 year maximum, but since torture was used in the commission of the offence carries a punishment of life imprisonment. Based on this information the seven people involved form part of a criminal organization for the purposes of the criminal code. It is clear that the group of persons did not form randomly

for the commission of a single offence at the start and the commission of offences over period in excess of two years within a court makes it impossible for the crimes to be random. The criminal organization is extended to more that the initial seven people mention based on the events of July 23, 2020. Figure 25: Fraudulent RCMP Warrant P4 presents evidence of unknown members of the Battlefords RCMP being instructed to prevent Dale J. Richardson from entering the court to aid in the commission of the crime. The unknown RCMP indicated to the agent of the Court of King's Bench for Saskatchewan that a mental health warrant was obtained. The persons involved in obtaining the mental health warrant are also involved in the criminal organization. This evidence is supported by the admission of Tonya Browarny that she swore in false information to obtain the mental health warrant which is not permissible by law (see Appendix N).

Every lawyer, judge, registry agent who received and reviewed the documentation concerning the fraud, torture and child trafficking were a part of the criminal organization. This assertion is made based on the fact that no reasonable person would conclude that lawyers, judges and registry agents would risk life imprisonment randomly for no reason. Even covering for a colleague is not reasonable in this case with offences of this magnitude. It is also completely unreasonable to assume that multiple people risked life imprisonment to help someone obtain a child in a family matter, that idea is completely absurd. What must be examined is what other factor has been present or associated with every instance of criminal activity taking place in multiple jurisdictions. The one piece of information that has been associated with every action is the exposure of

the AGMP guidance issued by the CDC and the SHA. Further examination of table S-31 and parties tied to it is warranted.

RELEVANT INFORMATION

In analyzing risk one must consider what is possible and the consequences of something that is possible. When the consequences of something happening is extremely negative one must ensure that does not happen. From establishing the existence of a criminal organization operating within the civil judicial system and other public and private entities, it is reasonable to assume that other agents of that criminal organization are operating in other areas. Since table S-31 and the engineering reports that have exposed the criminal negligence is a factor that is tied to all of the crimes it must be examined and other agencies related to it. A potential risk is bioterrorism and routes of introduction of a pathogen spread through aerosols are of concern based on the criminally negligent representation of table S-31 issued by the SHA and the CDC. Aerosol spread through an infected person is one potential source of spread which is why the AGMP guidelines exist. Another such means is artificial introduction of biological agents. Several delivery mechanism have been identified by the Russian Ministry of Defence ("Russian MoD") as shown in Illustration 1: Delivery of Biological Formulations (Courtesy of Russian MoD).

The illustration has picture of a drone delivery system that could be used to introduce pathogens into an HVAC system to spread contagions. Drones are relatively cheap and very accessible to anyone making this a probable means of delivering a biological payload. The small size makes drones difficult to detect and increases the likely-hood of its use as a method of delivery.

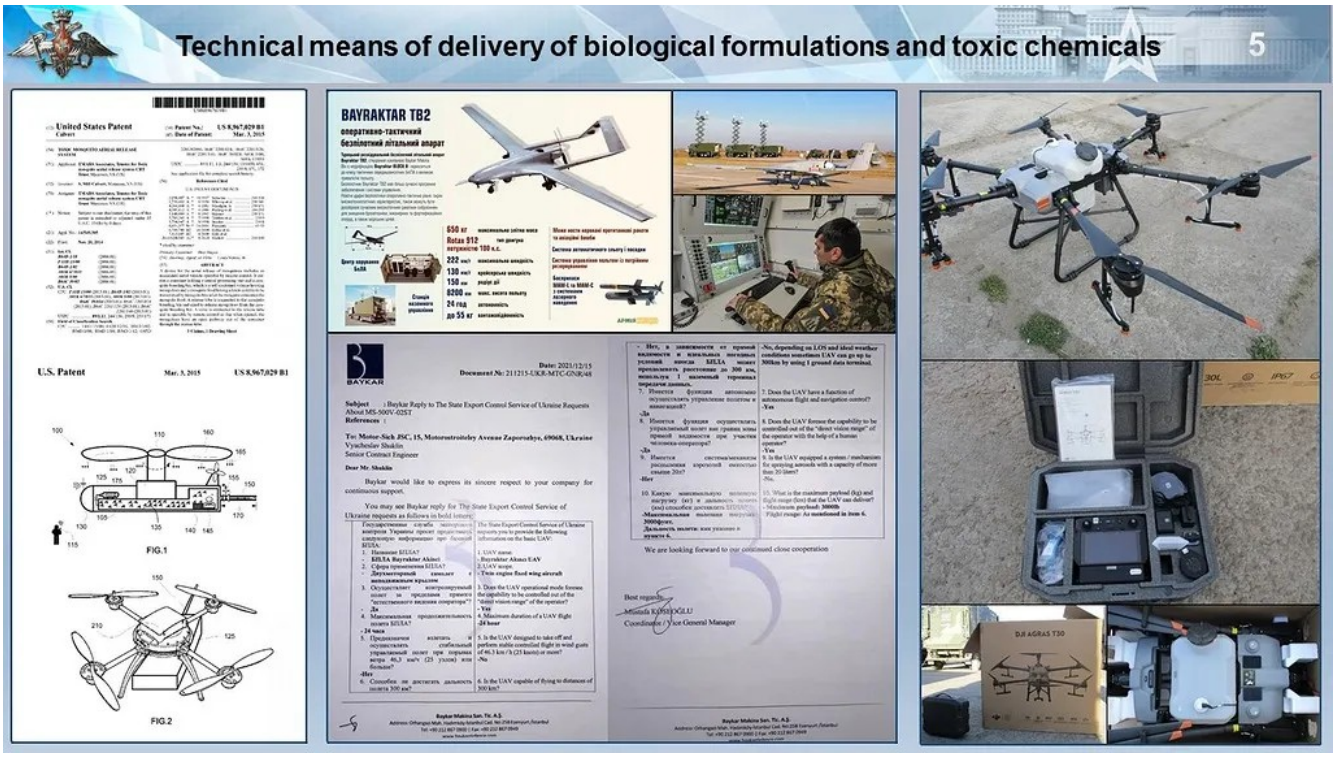


Illustration 1: Delivery of Biological Formulations (Courtesy of Russian MoD)

The UAV is an impractical means of distribution of a biological contagion into ventilation systems for many reasons one of them is the inability to navigate them to deliver the payload to a building's ventilation system efficiently. The drone on the right of the illustration can be fitted suitably to deliver a payload into a ventilation system. According to the Russian MoD this information was produced during the conflict with Ukraine. It is possible that the information could be disinformation, however, for the purposes of analyzing risk, the question that only needs to be answered is if the scenario is possible. This situation presented is possible. Based on the established fact that organized crime exists in the judiciary in multiple jurisdictions in Canada suppressing information that would reduce the impact of biological attacks and mitigate the current pandemic it is increasingly probable that situations such as what was outlined would occur. The focus of

this section of the discussion is on the possibility of it happening and it is very much possible.

The CDC issued guidance that introduced an unknown number of failures in an unknown number of systems during a pandemic and the guidelines were changed in 2003 long before the pandemic began. It removed a critical piece of information regarding air mixing which is poor engineering practice. Organized crime is present in the civil judicial system and suppressing the exposure of the critical weakness introduced by the CDC and other health authorities in various jurisdictions in Canada and the United States. The National Institute of Health's ("NIH") National Center for Biotechnology Information posted a study that stated the following "Only two established room based technologies are available to supplement mechanical ventilation: portable room air cleaners and upper room germicidal UV air disinfection. Portable room air cleaners can be effective, but performance is limited by their clean air delivery rate relative to room volume. SARS-CoV-2 is highly susceptible to GUV, an 80-year-old technology that has been shown to safely, quietly, effectively and economically produce the equivalent of 10 to 20 or more air changes per hour under real life conditions. For these reasons, upper room GUV is the essential engineering intervention for reducing COVID-19 spread" (Nardell, 2021). This is extremely curious that the NIH would not be promoting an extremely effective and low cost infection control in the midst of a pandemic where the world is in extreme financial strain. Not widely disseminating this information would increase risk of disease as the use of UV air disinfection is not well known to the public. Making this information available to the public would reduce risk of transmission substantially.

Consider the following quote: “Biological threats—whether naturally occurring, accidental, or deliberate in origin—are among the most serious threats facing the United States and the international community. As we have seen with the COVID-19 pandemic, biological incidents can cause extreme harm to the United States, including death, hospitalizations, disabilities, psychological trauma, and economic and social disruption on a massive scale. Biological incidents, whether naturally occurring, accidental, or deliberate, can originate in one country and spread to many others, with potentially far-reaching international consequences” (U.S. White House, 2022). It would be expected that the NIH would be promoting the use of UV air disinfection to help mitigate the extreme harm to the United States to support the statement issued by the White House, however it does not. This is an unreasonable action for a government agency responsible for health.

Washington State Department of Health as of October 27, 2020 was using table S-31 on its documentation as can be observed in Figure 35: Table S-31 (Courtesy of Washington State Department of Health). A recent search on the website now directs people to a Dental Clinic COVID Prevention flyer shown in Figure 36: Dental Clinic COVID Prevention Flyer (Courtesy of Washington State Department of Health). The first link does not lead to anywhere. When the search link was clicked it directed to the page shown in Figure 37: Dental Clinic COVID Flyer First Link Destination. The link goes to nowhere which is not helpful to anyone and should not have happened during a pandemic. This is completely unacceptable. The second link on the page goes to the CDC documentation regarding table S-31. The third link did not provide any useful information with respect to infection controls for the clinicians.

emerging viral pathogen claim, use products with label claims against human coronaviruses, or enveloped or non-enveloped viruses, according to label instructions.

3. Once the patient leaves, follow CDC recommendations for time the exam room should remain vacant:
   - Interim Infection Prevention and Control Recommendations for Patients with Suspected or Confirmed Coronavirus Disease 2019 (COVID-19) in Healthcare Settings
   - Healthcare Infection Prevention and Control FAQs for COVID-19
   - Table B1 "Air changes/hour (ACH) and time required for airborne contaminant removal by efficiency" From the 2003 Guidelines for Environmental Infection Control in Healthcare Facilities.

Table B.1. Air changes/hour (ACH) and time required for airborne-contaminant removal by efficiency *

ACH § ¶	Time (mins.) required for removal 99% efficiency	Time (mins.) required for removal 99.9% efficiency
4	69	104
6+	46	69
8	35	52
10+	28	41
12+	23	35
15+	18	28
20	14	21
50	6	8

* This table is revised from Table S3-1 in reference 4 and has been adapted from the formula for the rate of purging airborne contaminants presented in reference 1435.
+ Denotes frequently cited ACH for patient-care areas.
§ Values were derived from the formula: $t2 - t1 = -[\ln(C2 / C1) / (Q / V)] \times 60$, with $t1 = 0$

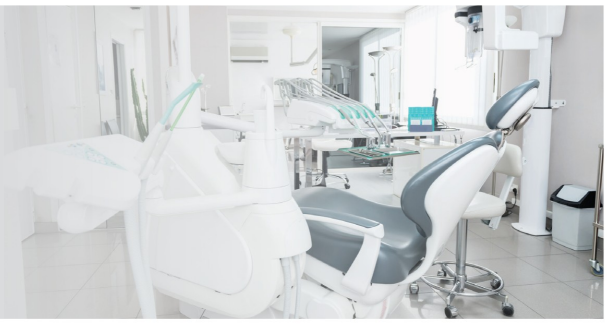
Patient Disposition

1. Home care: If a patient is suspected or confirmed to have COVID-19, they should remain under home isolation until
   a. At least 3 days (72 hours) have passed since recovery defined as resolution of fever without the use of fever-reducing medications and improvement in respiratory symptoms (e.g., cough, shortness of breath); and,
   b. At least 10 days have passed since symptoms first appeared, or since the first COVID-19 diagnostic test if asymptomatic and has remained asymptomatic.
2. Patients with fever with cough or shortness of breath but in whom COVID-19 is not suspected should stay home away from others until 72 hours after the fever is gone and symptoms get better. See https://www.doh.wa.gov/Portals/1/Documents/1600/coronavirus/COVIDcasepositive.pdf

To request this document in another format, call 1-800-525-0127. Deaf or hard of hearing customers, please call 711 (Washington Relay) or email civil.rights@doh.wa.gov.

Figure 35: Table S-31 (Courtesy of Washington State Department of Health)

Preventing Transmission of COVID-19 in Dental Offices



You can reduce COVID-19 exposure in your dental office by taking the following measures:

Use fit tested, NIOSH-approved N95 during AGPs on any patient, regardless of COVID-19 status.

- AGPs in dentistry include, but are not limited to: ultrasonic scaler, high-speed dental handpiece, air/water syringe, air polishing, and air abrasion.

Wear source control (masking) at all times.

Use mitigation methods such as four-handed dentistry, high evacuation suction, and dental dams to minimize droplet spatter and aerosols.

Reduce infectious particles in the air by increasing ventilation, including use of portable HEPA air filtration systems.

Provide dental treatment in individual patient rooms whenever possible.

Prevent the spread of pathogens in dental facilities with open floor plans (when possible) by:

- Assuring at least 6 feet of space between patient chairs.
- Creating physical barriers between patient chairs.
- Orienting operatories parallel to the direction of airflow.
- Placing the patient's head near the return air vents, away from pedestrian corridors, and toward the rear wall when using vestibule-type office layouts.
- Accounting for the time required to clean and disinfect operatories between patients when calculating your daily patient volume.

Resources:

Ventilation and Air Quality for Reducing Transmission of COVID-19:
https://www.doh.wa.gov/Portals/1/Documents/1600/coronavirus/VentilationGuidance.pdf

Preventing Transmission of SARS-CoV-2 During Aerosol Generating and Other Procedures:
https://www.doh.wa.gov/Portals/1/Documents/1600/coronavirus/COVID19InfectionControlFor-AerosolGeneratingProcedures.pdf

Interim Infection Prevention and Control Recommendations for Healthcare Personnel During the Coronavirus Disease 2019 (COVID-19) Pandemic:
https://www.cdc.gov/coronavirus/2019-ncov/hcp/infection-control-recommendations.html

Washington State Department of Health

DOH 420-378 December 2021
To request this document in another format, call 1-800-525-0127. Deaf or hard of hearing customers, please call 711 (Washington Relay) or email civil.rights@doh.wa.gov.

For more information:
HAI-COVID@doh.wa.gov

Figure 36: Dental Clinic COVID Prevention Flyer (Courtesy of Washington State Department of Health)

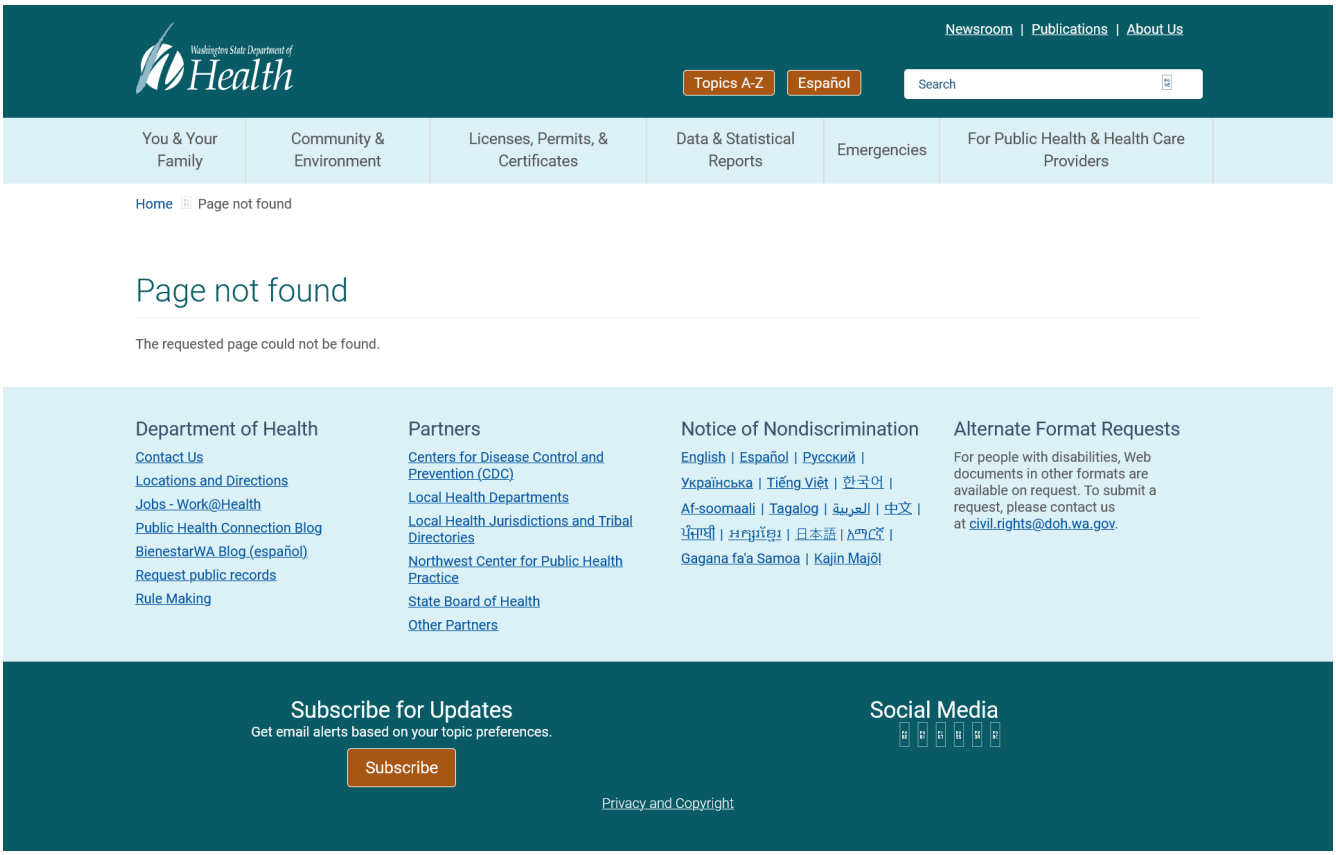


Figure 37: Dental Clinic COVID Flyer First Link Destination

This direction follows the same direction as what is listed previously in this report. This creates the potential for an unknown number of failures as was outlined previously. This is an unacceptable risk introduced into the state of Washington.

OSHA DISCUSSION

The United States Department of Labor through the Occupational Safety and Health Administration ("OSHA") issued COVID-19 Healthcare Emergency Temporary Standard ("Healthcare ETS"). Section 1910.502(g)(2) states "The employer must ensure that the procedure is performed in an existing AIIR, if available" (U.S. Department of Labor, 2021). There is no alternative given if there is no Airborne infection isolation room ("AIIR"). Not providing an alternative to reduce the risk when no AIIR is available is a

known hazard that has been introduced into workplaces that do not have AIIR's as there are other ways to mitigate risks. If it is imperative to have AGMP's conducted in AIIR's when present it would mean that substantial risk of sickness and death is present. There should be other mitigation requirements for places that do not have AIIR's.

Section 1910.502(k)(1)(ii) states: "The amount of outside air circulated through its HVAC system(s) and the number of air changes are maximized to the extent appropriate" (U.S. Department of Labor, 2021). No direction as to determine where to ascertain this information. No clear direction is given here. ASHRAE recommends "Use combinations of filters and air cleaners that achieve MERV 13 or better levels of performance for air recirculated by HVAC systems" (ASHRAE, 2021). Note 2 in paragraph k of the same document states "In addition to the requirements for existing HVAC systems and AIIRs, all employers should also consider other measures to improve ventilation in accordance with "CDC's Ventilation Guidance,"(available at www.cdc.gov/coronavirus/2019-ncov/community/ventilation.html) (e.g., opening windows and doors). This could include maximizing ventilation in buildings without HVAC systems or in vehicles" (U.S. Department of Labor, 2021). Again there is no definitive direction here. In risk assessment engineering controls are the first line of contagion mitigation, yet no clear direction is given. Vaccination is given a far more definitive directive in the same documentation while engineering controls are ambiguous at best (U.S. Department of Labor, 2021). Engineering controls should have a far wider reach of contagions affected by its mitigation as it should reduce the spread of any contagions within the range of the mitigation systems installed.

The direction given for PPE and other areas are strong and use the language such as "must" no such clear direction is given for the engineering controls. This is not what should be done. See Figure 38: Hierarchy of control (Courtesy of Nelson).

HIERARCHY OF CONTROL

Risk control refers to the program or process used to establish preventive and corrective measures as the final stage of the risk assessment process. Risk control is typically thought of as being organized according to a hierarchy (see Figure 4.3). At the top of the hierarchy is elimination, followed by substitution. When elimination and substitution are not possible or reasonable then engineering, administrative, and lastly personal protective equipment are implemented. The idea behind a control hierarchy is that when followed, there is a systematic process that reduces the probability of risk being realized thus making a system fundamentally safer. It is important to note that not every control is perfect; therefore, it is necessary that for each level within the hierarchy multiple different types of controls (from each category) should be implemented.

FIGURE 4.3

RISK CONTROL

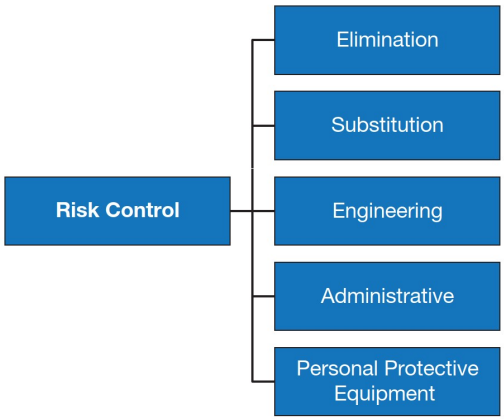


Figure 38: Hierarchy of control (Courtesy of Nelson)

More information can be seen in Appendix O. In addition, the HVAC infection controls are done by Medical Doctors, Dentists and a Public Health professional from Alberta Health Services ("AHS") (Alberta Health Services, n.d.). The Aerosol Generating Medical Procedures guidance that was written for the AHS had no engineering professionals to comment on the engineering controls. No person had engineering or engineering

technology credentials and were unqualified to give any guidance for HVAC infection controls. There are several issues with the guidance given to the dental clinics. Under the heading Engineering Considerations, it says “Use the expertise of HVAC professional to ensure maximum air filtration efficiency and increase percentage of outdoor air supplied through HVAC" (Alberta Health Services, n.d.). There is no definition of what an HVAC professional is. It could be a plumber, an HVAC Technician, an Engineer of Technologist. The abilities of an Engineer and Engineering Technologist are far different than that of a plumber or an HVAC technician. As stated previously in this study, it was determined that plumbers were not following proper infection control protocols in Saskatchewan and introducing unknowns into the system that could not be accounted for. This would create an unknown number of failures in an unknown number of systems. The fact that this guidance was issued by non-engineering persons, is criminal negligence. There was no excuse for the AHS to have non-engineering professionals give guidance on engineering controls during a pandemic or otherwise. It is introducing a hazard having an incompetent person create guidelines for a workplace.

Making matters worse is that Dr. John Conly is a World Health Organization advisor who does not support aerosol transmission of SARS-Cov-2 (Miller & Collins, 2021). The problem is that Dr. John Conly is not qualified to speak on the science of particulate removed from the air by HVAC systems. That falls under the scope of the engineering sciences. During pandemic risk assessment, aerosol transmission must be considered for things that have the potential to be transmitted in that manner until aerosol transmission is definitively ruled out. Aerosol transmission was never ruled out and the

guidance issued by the AHS increased workplace hazards and exposed people to increased risk of illness and death.

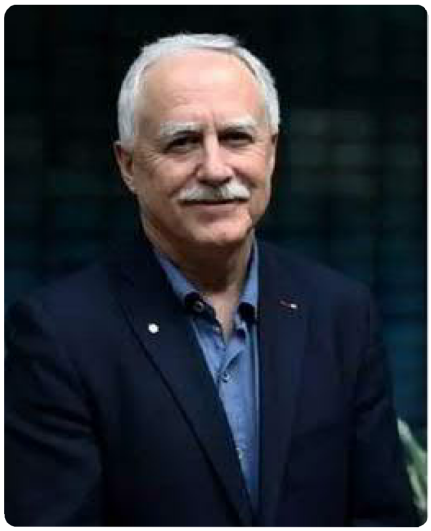
It was also known that previous corona viruses were spread through the aerosols. “Severe acute respiratory syndrome (SARS), caused by a corona virus similar to the common cold, was assumed to result from large droplet transmission; however, in an outbreak in a high-rise apartment, airborne transmission was the primary mode of disease spread, likely through dissemination from a bathroom drain (Yu et al. 2004). Ventilation and airflows in buildings were shown to affect the transmission of SARS in this outbreak and another outbreak in a hospital ward (Li et al. 2005a, 2005b)” (American Society Of Heating, Refrigerating And Air-Conditioning Engineers, 2017). consider the following quote: “Biological pathogens have been weaponized to enable delivery in a variety of forms. Effective delivery of bioagents to a large population is difficult because of the need to get relatively large doses to large numbers of people. Dilution of contaminants in ambient air is rapid, and very large numbers of organisms are required to produce lethal concentrations. The confines of a building and controlled air exchanges rates can help maintain concentrations of agents for longer periods of time than would occur in outdoor air. However, filtration and real-time killing mechanisms in building air-handling systems can remove or render ineffective airborne bioaerosols” (American Society Of Heating, Refrigerating And Air-Conditioning Engineers, 2011). This last statement makes clear why engineering professionals could not have written the guidelines as it is very clear to engineering professionals the manner in which HVAC infection controls are supposed to take place. The resistance to having the previous engineering reports made

public by presenting it to the courts makes bioterrorism an increasingly probable outcome.

DISCUSSION ON DR. JOHN CONLY

On April 28 2020 Dr John Conly produced a PowerPoint presentation in which he stated "Contact droplet not airborne transmission" (Conly, 2020).

Dr. John Maynard Conly, MD, FRCPC



Professor - Medicine

Cumming School of Medicine, Department of Medicine

Full Member

The Calvin, Phoebe and Joan Snyder Institute for Chronic Diseases

Illustration 2: Dr. John Maynard Conly

Dr. John Conly was a senior technical officer for COVID-19 during 2020. Dr. John Conly is currently the Chair of the World Health Organization Infection Prevention and Control Research and Development Expert Group for COVID-19. Dr. John Conly is a part of the Scientific Advisory Group for the Alberta Health Services COVID-19 pandemic response.

This is an important connection that must be examined further. The relationship between the positions held by Dr. John Conly will be discussed later on in the section on risk. A CBC article wrote the following about Conly: “The WHO has been criticized in the past for its reluctance to acknowledge aerosol transmission — or microscopic airborne particles — as a primary driver of the pandemic, and experts say Conly is at the heart of the issue within the organization. "Frankly, I think he just can't admit he's wrong," said Linsey Marr, an expert on the airborne transmission of viruses at Virginia Tech in Blacksburg, Va.” (Miller & Collins, 2021). This is very problematic that Dr. John Conly is at the heart of the resistance of the WHO’s reluctance to admit aerosol transmission and then sitting on the Alberta Health Services Scientific Advisory Group (“SAG”) who also completely disregarded aerosol transmission of the SARS-Cov-2 virus. Making matters worse was that the SAG reviewed a document that contained guidance on engineering HVAC controls that was written and reviewed by a panel of “experts” that contained 0 Engineering personnel. This is an an observable pattern of behaviour that indicates an extreme amount of risk. Using a person with preconceived ideas to review material outside the scope of their discipline that was created by people outside of the scope of their discipline to implement that material in the middle of a pandemic is beyond criminal and it is fitting of the description of organized crime as outlined in the Criminal Code.

Dr. John Conly contributed to a paper in 2022 that claimed that aerosol transmission was not directly linked to transmission of SARS-Cov-2 (Heneghan et al., 2022). Other sources have stated otherwise and some of these sources are quoted previously. Some other

interesting information about Dr. John Conly is notable especially his link to Saskatchewan, as seen in the following quote: “A graduate of the University of Saskatchewan.....in collaboration with the Public Health Agency of Canada established the Canadian Nosocomial Infection Surveillance Program” (CCA, 2018) see Illustration 3: Canadian Nosocomial Infection Surveillance Program (Courtesy of CNSIP). The same documentation stated that he was also doing work in drug resistant microbes and its surveillance with the WHO. Another study states that “Biofilms found in dental unit waterlines are a potential source for the transmission of pathogens,40- 43 an issue that is causing increasing concern. At the time of this study, CDA recommended that waterlines be flushed after each patient; however, provincial variation in reports of compliance ranged from 20 to 68%. CDA recommendations for dental unit waterlines have recently been updated44 but are still less stringent than those published by the American Dental Association” (CDA, n.d.). There is an added risk from the biofilms and potential contamination from water lines. This has been completely overlooked by all of the guidelines. Further investigation is needed.

LINK TO THE WORLD HEALTH ORGANIZATION

Dr. John Conly has connection to the WHO and the infection control protocols that was resistant to admitting that SARS-Cov-2 was transmitted by aerosols (Miller & Collins, 2021). The WHO Conceptual zero draft for the consideration of the Intergovernmental Negotiating Body at its third meeting states: “Reflecting on the lessons learned from coronavirus disease (COVID-19) and other outbreaks with global and regional impact, including, inter alia, HIV, Ebola virus disease, Zika virus disease, Middle

Illustration 3: Canadian Nosocomial Infection Surveillance Program (Courtesy of CNSIP)

East respiratory syndrome and monkeypox, and with a view to addressing and closing gaps and improving future response" (WHO, 2022). Considering that Dr. John Conly has been a large proponent of suppressing the aerosol transmission of SARS-Cov-2 at the WHO and domestically, this poses a serious national security risk to both Canada and the United States from both Dr. John Conly and from the WHO. This national security risk is further compounded by the following statement "SARS is particularly dangerous to handle in the laboratory because there is no vaccine, so all laboratory workers are susceptible. It can be transmitted through aerosol/droplet mechanisms: the very large (321 cases) Amoy Gardens outbreak in Hong Kong was traced to infectious aerosols created by turbulent flushing water flow in the sewer lines: this turbulent flow generated aerosols that were sucked back up into numerous adjacent apartments through dry floor drains by negative pressure generated by bathroom exhaust fans" (Furmanski, 2014).

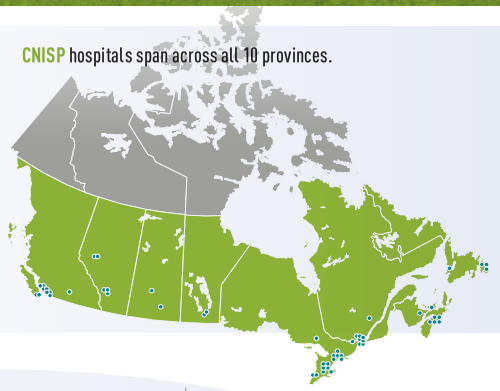
CNISP Canadian Nosocomial Infection Surveillance Program

Established in 1994, CNISP conducts national surveillance in sentinel acute-care hospitals across Canada on healthcare-associated infections such as bloodstream infections and on antimicrobial resistant organisms such as methicillin-resistant *Staphylococcus aureus*

ABBREVIATIONS

- **AMMI** Association of Medical Microbiology and Infectious Disease Canada
- **BSI** Bloodstream infection
- **CA** Community-Associated
- **CCDIC** Centre for Communicable Diseases and Infection Control
- **CHEC** Canadian Hospital Epidemiology Committee
- **CDI** *Clostridium difficile* infection
- **CNPHI** Canadian Network for Public Health Intelligence
- **CRGN** Carbapenem-resistant gram-negative bacterium
- **CVC** Central venous catheter
- **CSF** Cerebrospinal fluid
- **ESBL** Extended Spectrum Beta-Lactamase
- **HAI** Healthcare-Associated Infection
- **HA** Healthcare-Associated
- **ICU** Intensive Care Unit
- **MRSA** Methicillin-resistant *Staphylococcus aureus*
- **NML** National Microbiology Laboratory, PHAC
- **PHAC** Public Health Agency of Canada
- **SSI** Surgical site infection
- **VRE** Vancomycin-resistant *Enterococcus*

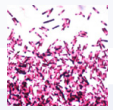
CNISP hospitals span across all 10 provinces.



Data and specimens collected annually by CNISP produce national infection rates, identify organism strain types, monitor antimicrobial resistance and antibiotic usage patterns which all help to reduce the impact of HAIs and antimicrobial resistance in hospitals, which in turn impacts the community

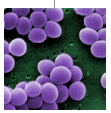
Since 1995, CNISP has produced over **260 publications** including scientific articles, reports and conference abstracts that provide scientific evidence to inform public health action to reduce infections

This time-line highlights the significant milestones initiated by CNISP which have provided the data needed to monitor and help reduce the impact of healthcare-associated and antimicrobial resistant infections.



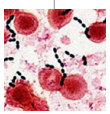
1994
- **18 HOSPITALS** join CNISP
- CNISP established by a collaborative effort between PHAC (CCDIC, NML) and sentinel hospitals across Canada participating through CHEC/AMMI

1995
- MRSA surveillance initiated
- NML initiated molecular characterization (strain typing) and antibiotic resistance testing of MRSA



1997
- 6-week HA-CDI surveillance study completed

1998
- BSI surveillance in ICUs and hemodialysis units conducted for 6-month pilot period



1999
- 1-year ESBL pilot study initiated
- VRE surveillance initiated
- NML initiated molecular characterization (strain typing) and antibiotic resistance testing of VRE

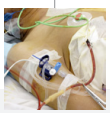
2000
- **35 HOSPITALS** participate in CNISP
- Post CSF shunt insertion SSI pilot study conducted from 2000–2002
- Surveys of infection control practices relating to MRSA and VRE infections conducted
- NML identified a new gene that makes an Enterococci species resistant to the antibiotic vancomycin

2002
- A point prevalence survey counting all HAIs that were present during a 24-hour period in acute-care hospitals was conducted

2004
- NML analyzed *E.coli* and *Klebsiella* organisms that produce enzymes making them resistant to the penicillin family of antibiotics

2005
- **43 HOSPITALS** participate in CNISP
- Febrile respiratory illness surveillance among children in acute-care hospitals initiated
- HA-CDI 6-month pilot surveillance and infection control practice study conducted
- NML identified molecular characteristics of *E.coli* resistant to the antibiotic cefoxitin

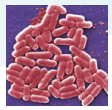
2006
- Post CSF shunt insertion SSI surveillance as well as influenza surveillance among hospitalized adult patients initiated
- CVC-BSI surveillance piloted along with a survey regarding the prevention, insertion and maintenance of CVCs in adult, pediatric and neonatal intensive care units and stem cell transplant units



2007
- Ongoing HA-CDI and CVC-BSI surveillance initiated

2008
- Switched from paper-based surveillance data submission by CNISP hospitals to a secure on-line data collection platform housed on CNPHI thereby improving data quality

2009
- A second point prevalence survey counting all HAIs that were present during a 24-hour period in acute-care hospitals conducted
- Pandemic H1N1 surveillance added to Adult flu surveillance, data sent to FluWatch thereby enhancing national flu data
- Surveillance for organisms that are resistant to the group of last resort antibiotics known as carbapenems (CRGN) initiated
- Data collection on the usage of antibiotics in acute-care hospitals initiated



2010
- **52 HOSPITALS** participate in CNISP
- Ongoing CNISP flu data submitted to FluWatch thereby enhancing national flu data
- Post pediatric cardiac surgery SSI surveillance initiated
- NML detects and molecularly characterizes first heterogeneous vancomycin intermediate resistant *Staphylococcus aureus* bacteria identified in Canada

2011
- Surveillance of SSIs post Hip and Knee prosthetic surgery initiated

2012
- NML molecularly characterized various strains of CA-MRSA

2014
- NML identified and characterized a *C.difficile* isolate with reduced susceptibility to vancomycin

2015
- NML analyzed four plasmids from *E.coli* and *S.marcescens* bacteria that carry a gene which makes them resistant to multiple antibiotics
- Addition of CA and recurrent CDI added to HA-CDI surveillance

2016 AND BEYOND
- **65 HOSPITALS** now participate in CNISP
- CNISP will continue to conduct surveillance on existing healthcare-associated infections and their resistance patterns and monitor for new and emerging infections

1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016

Public Health Agency of Canada / Agence de la santé publique du Canada

CNISP·PCSIN

Canada

The same document goes on to further state that "SARS has not naturally recurred, but there have been six separate "escapes" from virology labs studying it: one each in Singapore and Taiwan, and in four distinct events at the same laboratory in Beijing" (Furmanski, 2014). This is something that was known to the WHO since they investigated the Taiwan escape in December of 2003 and recommended improvements to the laboratory procedures (Furmanski, 2014). The WHO also investigated another outbreak in conjunction with the CDC that traced the outbreak of SARS to the Chinese National Institute of Virology in Beijing and also found poor surveillance for laboratory infections (Furmanski, 2014). With the knowledge of the laboratory leaks that have contributed to pathogen outbreaks is highly suspect and an extreme risk factor that cannot be overlooked as the consequences are fatal and must be mitigated. The track record of the WHO are outright abominable when examining the lab leaks known to it and its failure to mention them. The CDC also carries a large amount of responsibility for not reporting the lab leaks of SARS to the public. The risk of bioterrorism increases exponentially when it is understood that in 2003 the CDC changed its guidelines for Aerosol Generating Medical Procedures in a manner that could permit a biological weapon to be unleashed and made to look like a random outbreak. Further investigation into this matter is demanded.

RUSSIAN MINISTRY OF DEFENCE DOCUMENTATION FROM THE UKRAINE CONFLICT

For the purposes of the analysis of risk documentation provided by the Russian Ministry of Defence will be considered. Some of the documentation provided by the Russian MoD is consistent with information that has been gathered from western sources and will be considered in the analysis. The first document examined in this section will be the

following: Illustration 4: Analysis of tularaemia and hepatitis outbreaks (Courtesy of Russian MoD).

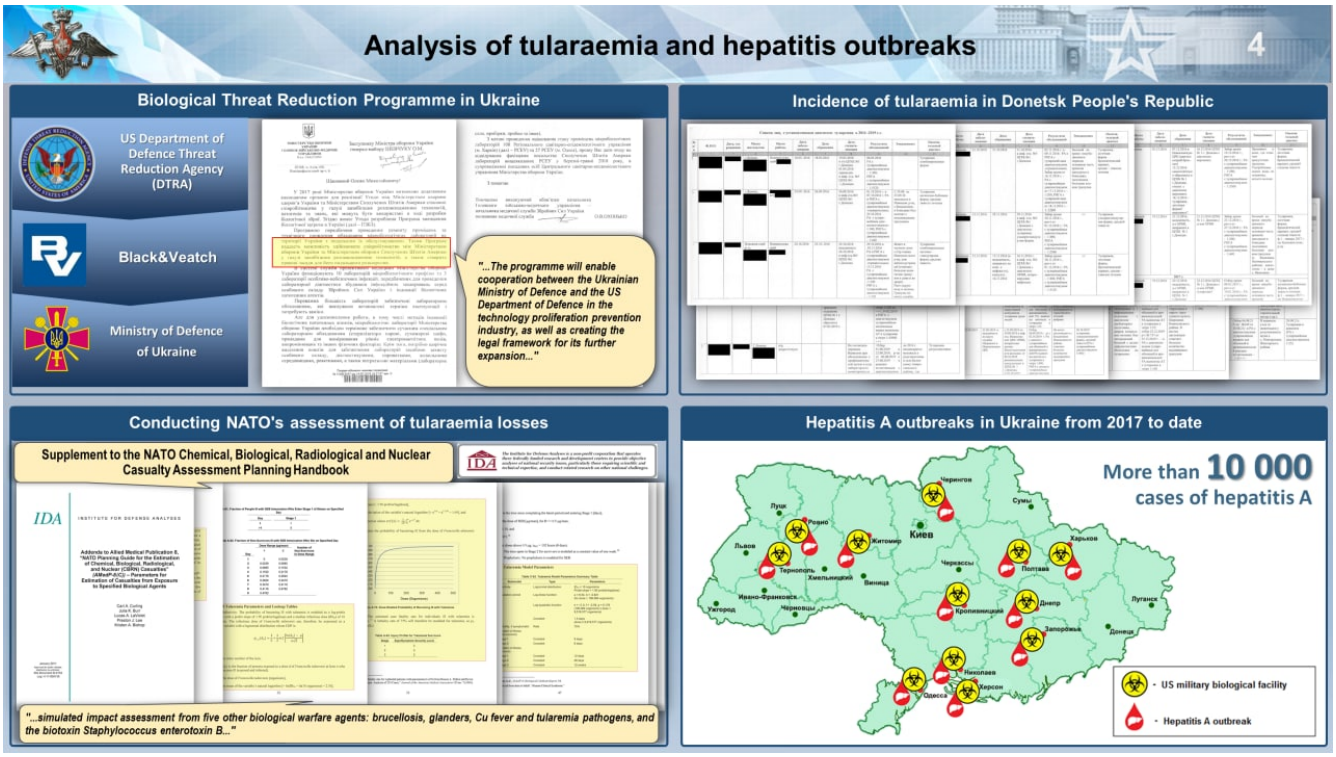


Illustration 4: Analysis of tularaemia and hepatitis outbreaks (Courtesy of Russian MoD)

The lower section of Illustration 4 shows a correlation between hepatitis outbreaks in Ukraine at the locations of biolabs and this is consistent with a documented history of pathogen outbreaks from BSL labs investigated by the WHO and the CDC. This information demonstrates that there is further risk of SARS-Cov-2 being potentially a lab leak. The next document to be examined is Illustration 5: COVID-19 pathogen study at Boston University (Courtesy of Russian MoD). The information in this illustration was reported in western media and can be considered reliable. From previous issues with the BSL labs there is a potential risk for this pathogen to be leaked into the community. Based on the handling of the SARS-Cov-2 pandemic a more deadly strain of the omicron

virus poses a substantial risk to life if it was leaked and adequate measures should be taken to mitigate the risk. This has not occurred and further study is warranted.

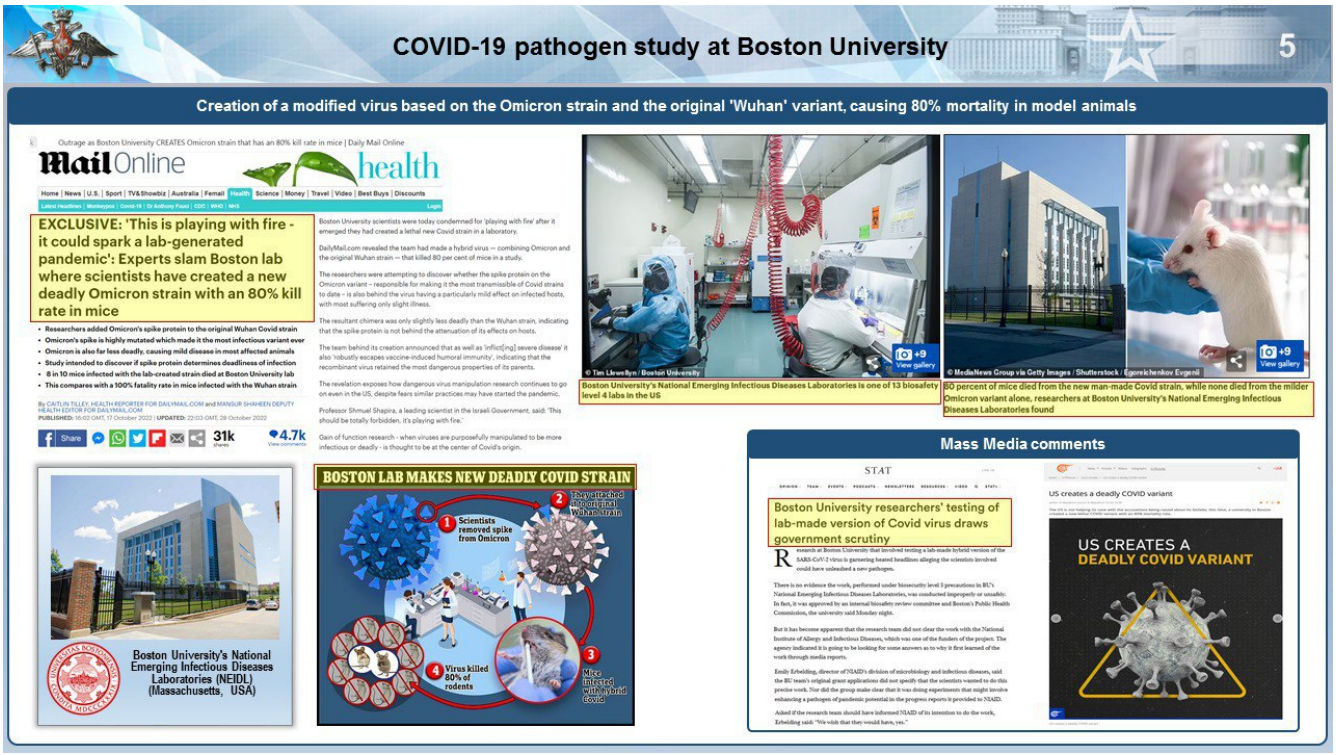


Illustration 5: COVID-19 pathogen study at Boston University (Courtesy of Russian MoD)

To further consider the risks several more illustrations will be discussed. In Illustration 6: U.S. and Ukraine responses to development and accumulating pathogenic materials (Courtesy of Russian MoD), it outlines that no documentation regarding ventilation in the virology lab room was noted which would create the circumstances required for an outbreak from the lab leak. Poor containment practices were the reasons for previous leaks that caused outbreaks. No documentation ventilation in a BSL lab is not an oversight, it is poor engineering practices and should never happen. No records of the operation and/or state of the ventilation in a BSL lab that contains pathogens that could potentially be spread through aerosols or airborne transmission should never occur. This is an unacceptable risk that must be mitigated.

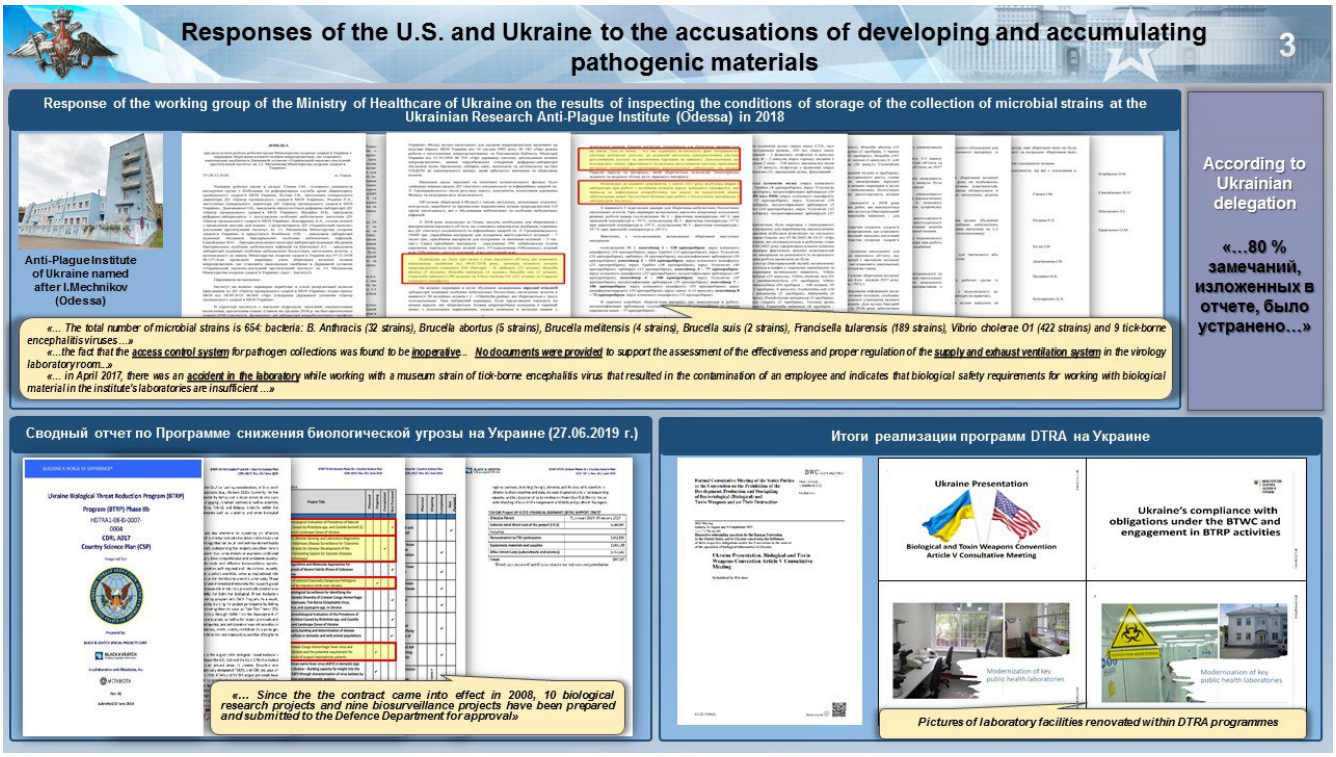


Illustration 6: U.S. and Ukraine responses to development and accumulating pathogenic materials (Courtesy of Russian MoD)

Illustration 7: Shadow members in the US military biological research (Courtesy of Russian MoD)

This risk is further compounded by the fact that the access control system for pathogen collection systems were found to be inoperative. The next illustration has a former director of the CDC Thomas Frieden listed as a shadow member in the US Military biological research programs. This is a plausible scenario since the CDC changed the AGMP guidelines around the time of the SARS-Cov-1 outbreak in 2002-2003. Since the guidelines permitted the distribution of a biological weapon to be masked as an outbreak, it is highly possible that agents of the CDC are involved in a biological weapons program of some kind since agents of the CDC created a critical weakness in the infrastructure of the United States that has made it more vulnerable to biological attack.

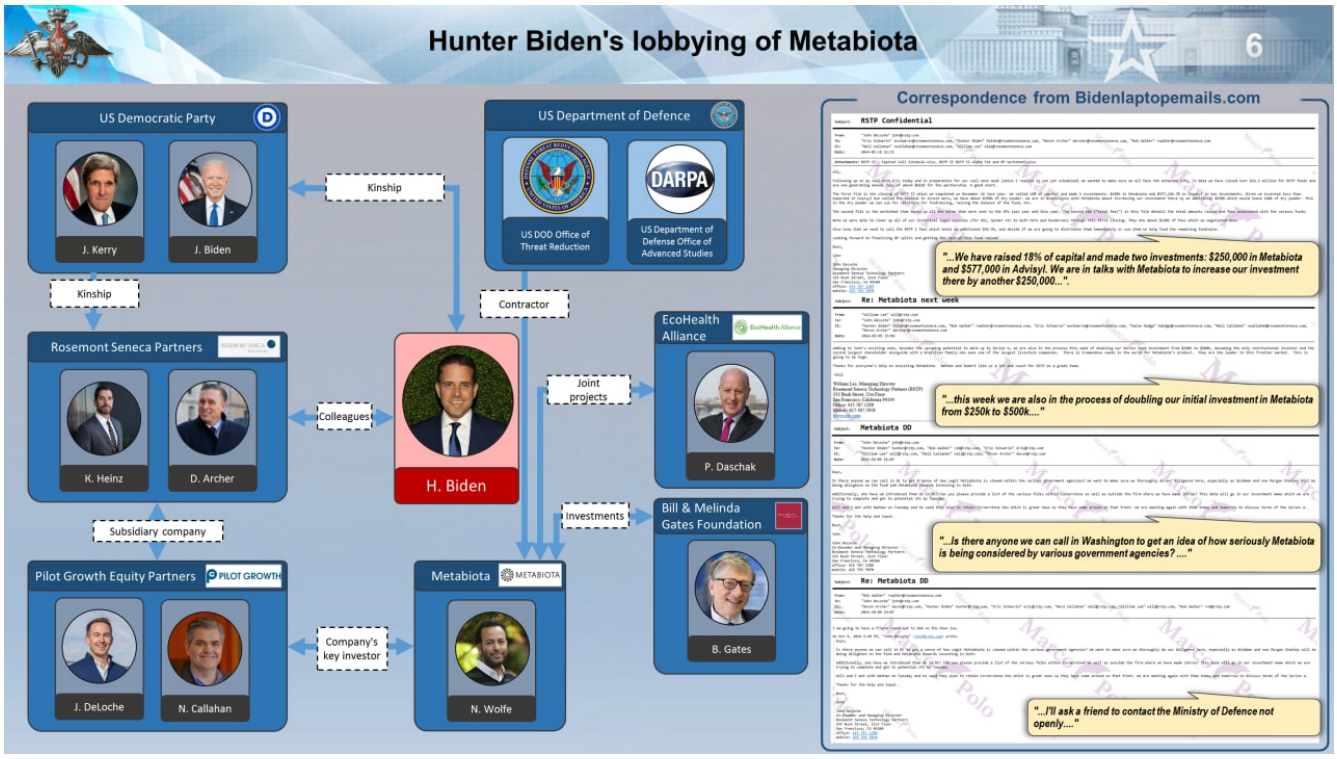


Illustration 8: Hunter Biden's lobbying of Metabiota (Courtesy of Russian MoD)

This next illustration shows Hunter Biden's connections in Illustration 8: Hunter Biden's lobbying of Metabiota (Courtesy of Russian MoD). The notable connection that will be made in the document is the Bill & Melinda Gates Foundation. The connection of the Bill

& Melinda Gates Foundation is relevant because of their large donations to the World Health Organization.

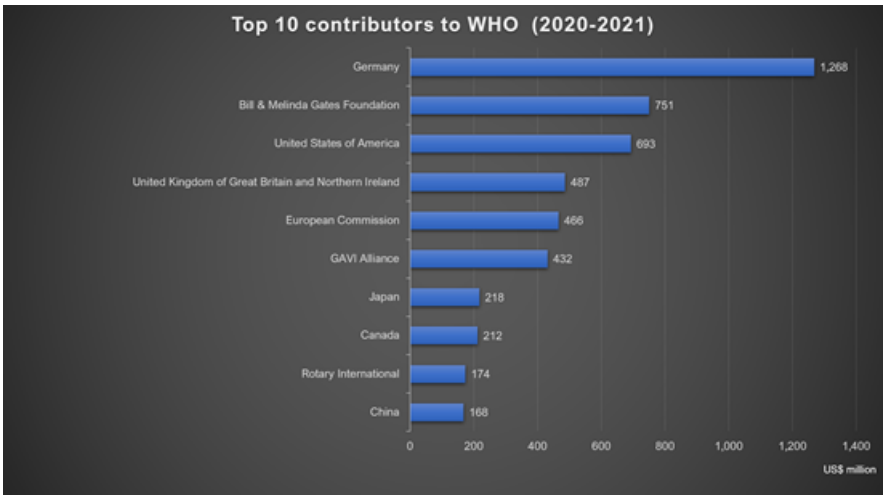


Illustration 9: Top 10 contributors to WHO (2020-2021) (Courtesy of WHO)

In the 2020-2021 period the Bill & Melinda Gates Foundation donated $751,000,000.00 to the WHO. It is well known that Hunter Biden has links to Metabiota and he is currently under scrutiny in the media as a result of his activities there. Bill Gates of the Bill & Melinda Gates Foundation has very questionable links to an organization that has created a critical weakness on a worldwide scale and to Metabiota an organization that has links to biological weapons in the Ukraine is one that demands further investigation as it is an extreme risk based on the action of the Bill & Melinda Gates Foundation investing an extremely large sum of money in the WHO. The last illustration in this section examined is Illustration 10: US engagement with Ukraine's biological facilities (Courtesy of Russian MoD). This illustration connects more individuals and organizations to the biological weapons including the United States Democratic Party to the unlawful actions. This connection to the unlawful actions is a reasonable connection since the

Illustration 10: US engagement with Ukraine's biological facilities (Courtesy of Russian MoD)

Democratic Party would be the main beneficiaries of any interference to the United States presidential elections in 2020. The level or criminal activity used to suppress the whistle-blowing of the AGMP guidance prior to the 2020 election makes election interference highly probable. SARS-Cov-2 created unprecedented changes to life including increasing the amount of mail in ballots on a worldwide scale. The extent of the changes should be examined thoroughly to determine what the full effects of the interference.

A BRIEF DISCUSSION ON THE COURT OF APPEAL FOR SASKATCHEWAN

Two prerogative writs were filed at the Court of King's Bench for Saskatchewan and scheduled for a hearing November 3, 2022. Each of the two writs included a writ of mandamus that had 12 criteria that needed to be argued for the writs to be considered. Amy Groothius, Registrar of the Court of Appeal for Saskatchewan was reported for crimes against Dale J. Richardson to five divisions of the Royal Canadian Mounted Police and is the subject of the demand for arrest in the mandamus for her participation in the organized crime failed to recuse herself from handling the matters pertaining to Dale J. Richardson. Chief Justice Richards failed to remove Amy Groothius after being notified of the criminal investigations surrounding Amy Groothius and other justices of the Court of Appeal for Saskatchewan including Justice Lian Schwann (See Appendix B-N). After the filing of the mandamus requesting the arrest of Amy Groothius for participation in the criminal activity outlined in this report and other crimes without limitation, Amy Groothius brought forward a request to have Dale J. Richardson declared a vexatious litigant (See Figure 39: Court of Appeal for Saskatchewan Retaliation by Amy Groothius). The arguments for the mandamus are listed in the following figures for necessary context (See Figure 40: Mandamus arguments 1 to Figure 60: Mandamus arguments 21)

The mandamus arguments are well developed and written, yet as can be seen in the orders of the judges, they purported that Dale J. Richardson could not advance a coherent evidentiary basis or a legal rational for the relief that he sought. The tests for mandamus were never examined in the orders and it is clear that the judges in the Court of Appeal for SaskatchewanCourt of Appeal for Saskatchewan were lying about the ability of Dale J. Richardson to advance legal rationale.

Form 9b
[*Rule 46.3*]

CACV3745, 3798, 4048

IN THE COURT OF APPEAL FOR SASKATCHEWAN

BETWEEN:

DALE J. RICHARDSON

Appellant / Applicant

AND:

KIMBERLEY ANNE RICHARDSON

Respondent

NOTICE PURSUANT TO RULE 46.3(1)

TAKE NOTICE THAT:

1. The Registrar has made a request that the Court consider whether the above-named Appellant/Applicant has habitually, persistently, and without reasonable cause commenced frivolous or vexatious proceedings in the Court of Appeal such that the Court should make an order prohibiting the commencement of proceedings without leave of the Court or a judge.

2. Within 10 days after receipt of this Notice pursuant to Rule 46.3(1), any party may serve and file a response to this notice.

DATED at Regina, Saskatchewan, on Monday, October 3, 2022.

AMY GROOTHUIS
Registrar

Registrar, Court of Appeal

TO: Dale J. Richardson

AND TO: Kimberley Anne Richardson
Assistant Commissioner Rhonda Blackmore of the Royal Canadian Mounted Police, Jessica Karam, the Ministry of Health, the Saskatchewan Health Authority, Unknown Registrars of the Court of Appeal for Saskatchewan, Registrar of Land Titles, and the Attorney General of Saskatchewan

New. Gaz. 9 Sep. 2022.

Figure 39: Court of Appeal for Saskatchewan Retaliation by Amy Groothius

97. On August 24, 2022 an Unknown Registrar of the CASK attempted to place the motion for Mandamus in chambers where it was impossible for Dale to get relief after doing so for two motions for prerogative relief place before Justice J. Kalmakoff and then a subsequent time after that. This is an observed pattern of deliberate intent to prejudice.

ARGUMENTS

I. REASONS FOR MANDAMUS

98. For a Writ of Mandamus to be enforced, the Applicant must demonstrate that he has a legal right to compel the Defendant to do or to refrain from doing the specific act. The duty enforced must have two qualities:

1. It must be a duty of a public nature: and
2. The duty must be imperative and not discretionary.

II. THE DUTY IS OF A PUBLIC NATURE

99. The duty to arrest the progression of torture is a public nature. On July 3, and 7, 2020 the Battlefords RCMP issued file numbers for torture for the Applicant and his daughter Karis K.N. Richardson. Torture is prohibited by section 12 of the Charter, and section 7 of the same is violated as torture is a gross deprivation of liberty. The Convention against Torture which has universal jurisdiction in Canada, expressly prohibits torture and demands that the perpetrators of torture be arrested. The Convention against Torture demands that all measures be employed by the state party to prevent acts of torture. No reasonable limits can ever exist to subject the public to crime.

100. Justice Zuk in violation of the Charter by his actions set precedent that Black persons are not people under the Charter and have no rights as human beings and have less rights that a slave.

101. Child trafficking is not permissible by the Courts and it is of a public nature to stop child trafficking for the purposes of exploitation by the state.

102. Fraud is not permitted to be used in a court to obtain any order. Numerous instances of fraud have been used to deprive the Applicant and Karis Kenna Nicole Richardson of rights.

Figure 40: Mandamus arguments 1

103. The statistical analysis in the engineering report presents irrefutable evidence of criminal activity in DIV 70 of 2020 and the Alberta Queen's Bench Matters and T-1404-20. Crimes committed in the courts is of the most extreme public nature. Jessica Karam is directly tied to the Alberta and T-1404-20 matters.

104. Jessica Karam used fraudulent shareholder information of a federal corporation for financial gain in T-1404-20. Jessica Karam abused the powers of the Attorney General of Canada to commit fraud, traffick a child and disrupt an essential service in a manner not authorized by law that was designed to cause harm to the public listed in sections (A)-(C) in 83.01(b) of the Criminal Code.

105. The Ministry of Health has no scientific justification for the issuance of the Aerosol Generating Medical Procedures neither does the SHA. As a part of the risk assessment used for the pandemic response the entire response must be re-examined based on faulty implementation. Since criminal negligence complaints are attached to the faulty risk assessment every death resulting from the pandemic response is criminal negligence causing death and all mandates must be stopped until a proper risk assessment can be conducted.

106. An observable pattern of deliberate intent to prejudice Dale by the Unknown Registrars of the CASK and Amy Groothius cannot be permitted to continue. This is a 100% rate of deliberate intent to prejudice and is irrefutable evidence of bias. Deliberate intent is further reinforced when there is a 0% rate of errors against opposing parties that favour Dale, ruling out incompetence as there would be a reasonable distribution of errors affecting all parties involved. No such distribution occurs. All errors are skewed to give favourable outcomes to anyone who opposes Dale

107. Exposing criminally negligent guidelines relating to the SARS-Cov-2 pandemic are in the utmost public interest. The public has a right not to be subjected to criminal negligence causing death.

III. THE DUTY MUST BE IMPERATIVE AND SHOULD NOT BE DISCRETIONARY

108. The prohibition on torture is an imperative duty. The Convention against Torture demands that the perpetrators of torture be arrested. There is an obligation to investigate the torture as it has

Figure 41: Mandamus arguments 2

continued because of the failure on the part of the RCMP to arrest the persons involved in the initial torture complaint, and further instigated torture with the parties implicated in the initial complaints. The torture of the Applicant continued even after he fled to the United States, in the presence of witnesses who have supplied affidavit evidence that is a part of this motion.

109. There is no right of any person to commit crime, nor is there any discretion permitted anywhere for organized crime to be perpetrated in the government or any other organization in Saskatchewan. This makes the duty imperative. Justice Zuk continued to further torture rather than restrain it and made a decision on a matter asking relief from torture in which he was implicated in and no reasonable person would believe that he had any reason to violate the Convention against Torture and the Canadian Victims Bill of Rights (“CVBR”).

110. The right to life of the public is imperative. The state has no right to murder the public. No mandate derived by crime is enforceable and must be stopped. Court rules cannot be used to murder innocent people or deprive people of rights.

111. The arbitrary removal of rights from a person is not sanction nor does any judge have the right to torture people or commit crimes.

112. No child should be subjected to deprivation of liberty and torture to shield crimes of other parties.

113. No child should be trafficked by the courts or any other agency of the state.

IV. CLEAR RIGHT TO THE PERFORMANCE OF THAT DUTY:

114. The issuance of the file numbers for the complaints of torture on July 3, 2020 and July 7, 2020 by the RCMP has placed the obligations of the Convention against Torture on the state party.

115. The issuance of file numbers for criminal negligence complaints on July 3, 2020 by the RCMP places the right of the public to be protected from criminal negligence and every act that arose as a result of the criminal negligence. This includes every SARS-Cov-2 measure instituted after July 3, 2020 as it arose as a result of multiple crimes. This includes without limitation, lockdowns, vaccination mandates and travel mandates.

Figure 42: Mandamus arguments 3

116. Children are persons under the Charter and have a right to not be victims of crime and torture. Parental consent does not give the state the right to victimize a child. The tests of section 7 and 12 for cruel and unusual treatment will be applied to the treatment of a child used to shield criminal activity.

(ii) Right to liberty

The liberty interest protected under section 7 has at least two aspects. The first aspect is directed to the protection of persons in a physical sense and is engaged when there is physical restraint such as imprisonment or the threat of imprisonment (R. v. Vaillancourt, [1987] 2 S.C.R. 636 at 652), arrest (Fleming v. Ontario, 2019 SCC 45 at paragraph 65), custodial or non-custodial detention (R. v. Swain, [1991] 1 S.C.R. 933; Winko v. British Columbia (Forensic Psychiatric Institute), [1999] 2 S.C.R. 625 at paragraph 64; R. v. Demers, [2004] 2 S.C.R. 489 at paragraph 30).....state compulsions or prohibitions affecting one's ability to move freely (R. v. Heywood, [1994] 3 S.C.R. 761 at 789). The physical restraint can be quite minor to engage the liberty component, such that compelling a person to give oral testimony constitutes a deprivation of liberty (Thomson Newspapers Ltd. v. Canada, [1990] 1 S.C.R. 425 at 536; R. v. S.(R.J.), [1995] 1 S.C.R. 451 at 479; Branch, supra at 26; Re: Application under section 83.28 of the Criminal Code, [2004] 2 S.C.R. 248 at paragraph 67)

This aspect of liberty includes the right to refuse medical treatment (A.C., supra, at paragraphs 100-102, 136) and the right to make “reasonable medical choices” without threat of criminal prosecution: R. v. Smith, [2015] 2 S.C.R. 602 at paragraph 18. It may also include the ability to choose where one intends to live (Godbout, supra), as well as a protected sphere of parental decision-making for parents to ensure their children's well-being, e.g., a right to make decisions concerning a child's education and health (B.(R.), supra, at paragraph 80)

(iii) Right to security of the person

Security of the person is generally given a broad interpretation and has both a physical and psychological aspect. The right encompasses freedom from the threat of physical punishment or suffering (e.g., deportation to a substantial risk of torture) as well as freedom from such punishment itself (Singh, supra at 207; Suresh, supra, at paragraphs 53-55). It is also engaged where police use force to effect an arrest (Fleming, supra, at paragraph 65).....Security of the person includes a person’s right to control his/her own bodily integrity. It will be engaged where the state interferes with personal autonomy and a person's ability to control his or her own physical or psychological integrity, for example by..... imposing unwanted medical treatment (R. v. Morgentaler, [1988] 1 S.C.R. 30 at 56; Carter, supra; Rodriguez, supra; Blencoe, supra at paragraph 55; A.C., supra, at paragraphs 100-102).....Security of the person will be engaged where state action has the likely effect of seriously impairing a person’s physical or mental health (R. v. Monney,

Figure 43: Mandamus arguments 4

[1999] 1 S.C.R. 652 at paragraph 55; Chaoulli, supra at paragraphs 111-124 and 200; R. v. Parker, 49 O.R. (3d) 481 (C.A.)). State action that prevents people engaged in risky but legal activity from taking steps to protect themselves from the risks can also implicate security of the person (Bedford, supra, at paragraphs 59-60, 64, 67, 71).

In addition, the right is engaged when state action causes severe psychological harm to the individual (G.(J.), supra at paragraph 59; Blencoe, supra at paragraph 58; K.L.W., supra, at paragraphs 85-87). To constitute a breach of one's psychological security of the person, the impugned action must have a serious and profound effect on the person's psychological integrity and the harm must result from the state action (Blencoe, supra at paragraphs 60-61; G.(J.), supra; K.L.W., supra. The psychological harm need not necessarily rise to the level of nervous shock or psychiatric illness, but it must be greater than ordinary stress or anxiety. The effects of the state interference must be assessed objectively, with a view to their impact on the psychological integrity of a person of reasonable sensibility (G.(J.), supra). Although not all state interference with the parent-child relationship will engage the parent's security of the person, the *state removal of a child from parental custody constitutes a serious interference with the psychological integrity of the parent qua parent and engages s.7 protection (G.(J.), supra, at paragraphs 63-64; K.L.W., supra, at paragraphs 85-87)*..... The Court has signaled the possibility that victims of torture and their next of kin have an interest in finding closure that may, if impeded, be sufficient to cause such serious psychological harm so as to engage the security of the person (Kazemi Estate v. Islamic Republic of Iran, [2014] 3 S.C.R. 176 at paragraphs 130, 133-34).

Principles of fundamental justice

General

The principles of fundamental justice are not limited to procedural matters but also include substantive principles of fundamental justice (Re B.C. Motor Vehicle Act, [1985] 2 S.C.R. 486 at paragraphs 62-67). The principles of fundamental justice are to be found in the basic tenets of our legal system, including the rights set out in sections 8-14 of the Charter (Re B.C. Motor Vehicle Act, supra, at paragraphs 29-30) and the basic principles of penal policy that have animated legislative and judicial practice in Canada and other common law jurisdictions (R. v. Lyons, [1987] 2 S.C.R. 309 at 327; R. v. Pearson, [1992] 3 S.C.R. 665 at 683).

The principles of fundamental justice include the principles against arbitrariness, overbreadth and gross disproportionality. A deprivation of a right will be arbitrary and thus unjustifiably limit section 7 if it "bears no connection to" the law's purpose (Bedford, supra, at paragraph 111; Rodriguez, supra at 594-95; Malmo-Levine, supra at paragraph 135; Chaoulli, supra at paragraphs 129-30 and 232; A.C., supra, at paragraph 103).

Overbreadth deals with laws that are rational in part but that overreach and capture some conduct that bears no relation to the legislative objective (Bedford, supra, at

Figure 44: Mandamus arguments 5

paragraphs 112-113; Heywood, supra, at 792-93; R. v. Clay, [2003] 3 S.C.R. 735 at paragraphs 37-40; Demers, supra, at paragraphs 39-43). An appropriate statement of the legislative objective is critical to proper overbreadth analysis. The objective must be taken at face value — there is no evaluation of the appropriateness of the objective.

Gross disproportionality targets laws that may be rationally connected to the objective but whose effects are so disproportionate that they cannot be supported. Gross disproportionality applies only in extreme cases where “the seriousness of the deprivation is totally out of sync with the objective of the measure” (Bedford, supra, at paragraph 120; Canada (Attorney General) v. PHS Community Services Society, [2011] 3 S.C.R. 134 at paragraph 133; Malmo-Levine, supra, at paragraph 169; Burns, supra at paragraph 78; Suresh, supra, at paragraph 47; Malmo-Levine, supra, at paragraphs 159-160).

The issue of disproportionate punishment (if it will be imposed by Canadian government action) should generally be approached in light of section 12 of the Charter (protecting against punishments that are grossly disproportionate, and thus “cruel and unusual”), not section 7 (Malmo-Levine, supra, at paragraph 160; R. v. Lloyd, [2016] 1 S.C.R. 130 at paragraph 43; R. v. Safarzadeh-Markhali, [2016] 1 S.C.R. 180 at paragraph 73)

Vagueness offends the principles of fundamental justice [1992] 2 S.C.R. 606 at 626-627 and 643; Ontario v. Canadian Pacific Ltd., [1995] 2 S.C.R. 1028 at 1070-72; R. v. Levkovic, [2013] 2 S.C.R. 204 at paragraphs 47-48)

(ii) Procedural fundamental justice

The principles of fundamental justice incorporate at least the requirements of the common law duty of procedural fairness (Singh, supra, at 212-13; Lyons, supra, at 361; Suresh, supra at paragraph 113; Ruby, supra at paragraph 39). They also incorporate many of the principles set out in sections 8-14 of the Charter (Re B.C. Motor Vehicle Act, supra, at paragraphs 29-30).....Context is particularly important with respect to procedural fundamental justice — the more serious the infringement of life, liberty and security of the person, the more rigorous the procedural requirements (Suresh, supra, paragraph 118; Charkaoui (2007), supra, paragraph 25; Charkaoui v. Canada (Citizenship and Immigration, [2008] 2 S.C.R. 326, at paragraphs 53-58)....However, the guiding question is always the severity of the impact on protected interests rather than a formal distinction between the different areas of law (Charkaoui (2008), supra at paragraph 53).

While some types of abuse of process (e.g., delay) may be better considered in relation to other Charter protections, abuse of process captures at least two residual aspects of trial fairness: (1) prosecutorial conduct affecting the fairness of the trial; and (2) prosecutorial conduct that “contravenes fundamental notions of justice and thus undermines the integrity of the judicial process” (O’Connor, supra, at paragraph 73).

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Figure 45: Mandamus arguments 6

The following are procedural principles of fundamental justice that have been found to apply outside the criminal context: the right to a hearing before an independent and impartial tribunal (Ruffo v. Conseil de la magistrature, [1995] 4 S.C.R. 267 at paragraph 38; Pearlman v. Manitoba Law Society Judicial Committee, [1991] 2 S.C.R. 869, at 883; Charkaoui (2007), supra, at paragraphs 29, 32); the right to a fair hearing, including the right to State-funded counsel where circumstances require it to ensure an effective opportunity to present one's case (G.(J.), supra at paragraphs 72-75 and 119; Ruby, supra, at paragraph 40); the opportunity to know the case one has to meet (Chiarelli, supra, at 745-46; Suresh, supra at paragraph 122; May v. Ferndale Institution, supra, at paragraph 92; Charkaoui (2007), supra, at paragraph 53), including, where the proceeding may have severe consequences, the disclosure of evidence (Charkaoui (2008) at paragraphs 56, 58; Harkat, supra at paragraphs 43, 57, 60); *the opportunity to present evidence to challenge the validity of the state's evidence (Suresh, supra at paragraph 123; Harkat, supra, at paragraph 67)*; the right to a decision on the facts and the law (Charkaoui (2007), supra, paragraphs 29, 48); the right to written reasons that articulate and rationally sustain an administrative decision (Suresh, supra, at paragraph 126); and *the right to protection against abuse of process (Cobb, supra, at paragraphs 52-53)*. The application of these principles is highly contextual, but it may be assumed that if they apply outside the criminal context, they apply with greater force in the criminal context.

Treatment or punishment by Canadian state actor

Detention for non-punitive reasons is a treatment — including the detention of permanent residents and foreign nationals for immigration-related reasons, as authorized under the Immigration and Refugee Protection Act (Charkaoui v. Canada (Citizenship and Immigration), [2007] 1 S.C.R. 350 at paragraphs 95-98).

Cruel and unusual?

This is a high threshold. To be cruel and unusual the treatment or punishment must be "grossly disproportionate": in other words, "so excessive as to outrage standards of decency", and be "abhorrent or intolerable to society". The threshold is not met by treatment or punishment that is "merely excessive" or disproportionate (Smith, supra, at 1072; Morrisey, supra, at paragraph 26; Malmo-Levine, supra, at paragraph 159; R. v. Ferguson, [2008] 1 S.C.R. 96, at paragraph 14; Nur, supra, at paragraph 39; R. v. Lloyd, [2016] 1 S.C.R. 130 at paragraph 24; R. v. Boutilier, [2017] 2 S.C.R. 936, at paragraph 52; Boudreault, supra at paragraph 45).

Extreme or irreversible treatments or punishments

Torture is "blatantly contrary to section 12" (Kazemi Estate v. Islamic Republic of Iran, [2014] 3 S.C.R. 176, at paragraph 52; Suresh v. Canada (Minister of Citizenship and Immigration), [2002] 1 S.C.R. 3, at paragraph 51). For the generally agreed-upon

Figure 46: Mandamus arguments 7

definition of “torture”, see section 269.1 of the Criminal Code and Article 1 of the Convention against Torture.

117. From the previous sections quoted it is clear that the very mention of torture complaints for a child and the clear deprivation of liberty, the section 7 violations, denial of principles of fundamental justice to prolong torture of the child and the parent to cover criminal negligence that affects the public as a whole gives a clear right to duty. Further compounding that right to duty is the trafficking of the child for the purposes of exploitation used to cover serious crimes The excessive treatment the child and parent is so extremely offensive given it was done to prevent the exposure of criminal negligence tied to the implementation of SARS-Cov-2 measures from July 3, 2020 to the present.

118. Black people are persons under the Charter and have rights. No party in any court has respected the rights of Dale as a black man and have used every excuse to deprive him of rights and sanction criminal activity and treat him worse than a slave.

119. Black people have the right to the same protection from the law. Dale was never given any.

120. Jessica Karam has demonstrated extremely racist, discriminatory, biased and predatory behaviour towards the Applicant and has ignored severe crimes against him and the public. Based on the crimes she has shielded, the evidence contained in the engineering report proves that Jessica Karam is a terrorist.

121. Jessica Karam is aware that she has been reported for crime in 5 divisions of the RCMP and to law enforcement in the United States and refuses to remove herself from the matters , demonstrating that she has no regard for the law, and a hatred of Dale J. Richardson.

122. A Caucasian woman paid $6.7 million dollars in legal fees and is not questioned and Dale was forced to pay child support while being a student and stripped of all assets by the courts and gave them to the Caucasian whom who purportedly could not pay her bill and had to sell the family home on a first appearance for $170,000.00. That 3959% increased cost of legal fees over the value of the asset said not to be afforded is an impossibility. There ability to pay the cost of legal

Figure 47: Mandamus argument 8

fees demanded an accounting of funds before issuing any divorce. The payment of legal fees is evidence of criminal activity. Crimes cannot be used to obtain orders in any Court.

123. Justice J. Zuk was aware that he was reported for crimes which includes without limitation child trafficking for the purposes of sexual and financial exploitation, mortgage fraud, terrorism, treason, crimes against humanity and criminal negligence causing death. He was obligated to recuse himself from the matters.

124. Amy Groothius was aware that she was reported for crimes which includes without limitation child trafficking for the purposes of sexual and financial exploitation, mortgage fraud, terrorism, treason, crimes against humanity and criminal negligence causing death. She was obligated to recuse herself from the matters. And the Unknown Registrarshad no right to refuse the documents based on rule contravention or place Dale in a position where it is impossible for him to succeed.

125. There is no right present anywhere for any person, organization or entity in Canada that has a right to commit crime or benefit from crime in any capacity.

126. Child trafficking and terrorism are not permissible and stopping every action derived from the commission of the forgoing crimes and the ones listed in the documentation hereunder are a clear right to duty.

A. **There Was a Conspiracy to Defraud and Torture the Plaintiff by State and Private Actors.**

127. Since Rule 10-46(1),(2) and 10-47 were used for homes that are in foreclosure, it could not be lawfully used by Justice R.W. Elson in the family matter. This demonstrates intent to defraud.

128. No law permits a judge to order the sale of the home on a first appearance, or give possession of a home that a person is living in without consideration of where the person is going to live especially when there is a child involved.

129. The RCMP seized the home of the Applicant and the registered office of DSR Karis Consulting Inc. without any lawful order of the court. The treasonous orders of Justice R.W. Elson were not

Figure 48: Mandamus arguments 9

issued until 4:03 pm on July 23, 2020 and the RCMP unlawfully breached the property at about 2 pm on July 23, 2020 clearly using force to take possession of the registered office to dispose of evidence of their criminal activity.

130. Justice R.W. Elson did not consider section 7 of the Family Property Act (SK) and in doing so, he violated the law expressly as there is no consideration made with any of these things in any order given by Justice R.W. Elson. What Justice R.W. Elson exercised was tyranny and a complete disregard for the law and since force was used by members of the RCMP to accomplish this end and to overthrow the rule of law it is explicitly treason against Canada.

131. The actions of the named parties in this motion demonstrate conspiracy as defined by the Criminal Code and have defrauded Dale beyond a reasonable doubt. The engineering report confirms this.

B. **The Parties On July 23, 2020 are Conspirators to Treason and those who Worked to Conceal the Overt Acts of that Day**

132. The actions taken by the defendants in this action and others affiliated with them mirror the actions taken by actors in the United States that have established case law that demonstrates that they are conspiring to commit treason. *Conspiracy to altogether prevent enforcement of statute of United States is conspiracy to commit treason by levying war against the United States. Bryant v. United States, 257 F. 378, 1919 U.S. App LEXIS 2212(5th Cir. 1919)*. The principle of comity demands that Canada respect the judicial decisions of the United States especially when it comes to what constitutes treasonable conduct. United States criminal case law does provide for punishment of a treaty as in the case of a normal law. *Treaty with foreign power was supreme law of land; Congress could provide punishment for its infraction on deprivation of or injury to right secured by it, as in case of ordinary law. In re Grand Jury (1886, DC Or) 11 Sawy 522, 26 F 749*. An overt show of force is not required if the conspiracy is exposed early. *The **Government contends that, but for the timely interruption of the conspiracy by the apprehension of its leaders actual resistance would have come about**. The greater part of the evidence relied upon by the government to establish the conspiracy related to facts which occurred before the*

Figure 49: Mandamus arguments 10

passage of the selective Draft Act. United States. Bryant v. United States, 257 F. 378, 1919 U.S. App LEXIS 2212 (5th Cir. 1919). Treason is a crime that it is impossible to commit without a conspiracy.

C. **The Court of Queen's Bench for Saskatchewan or any Other Associated Party Has Failed to Comply with the UN Torture Convention and shielded criminally negligent guidelines that have resulted in death**

133. The Applicant raised the question of unlawful, arbitrary and unconstitutional detention with this court in a motion to extend with Justice J.A. Caldwell in chambers on October 28, 2020, and in the orders denying the motion to extend, no mention is made of the arbitrary arrest as it played a factor into the issuing of the interim orders by Justice R.W. Elson, and the subsequent torture at the Battlefords Mental Health Centre at the hands of the RCMP and the SHA. Justice N.D. Crooks did not consider these circumstances when taking into account the deprivation of liberty for Karis K.N. Richardson and determined that it was theoretical. No application of the law to determine the validity of the detention, nor the deprivation of liberty.

134. No lawful sanction was ever used to forcibly medicate the Applicant with psychoactive drugs designed to profoundly disrupt his senses, or warrant the inhumane, cruel and degrading treatment he received by being stripped, and strapped to a bed and drugged in a manner that placed him at severe risk of injury and death.

135. APEGS failed to act in the public interest and allowed the crimes to be executed against the people of Saskatchewan with full knowledge that the AGMP guidance were not compliant with numerous laws including without limitation, Criminal Code, APEGS act and labour laws.

136. Every judge in Saskatchewan presented with this evidence committed fraud and/or other crimes to prevent evidence of the criminal negligence relating to the implementation of SARS-Cov-2 from ever being placed on the court record.

137. The actions that affected the absence of the Applicant are criminal based on the sworn affidavit submitted to the Federal Court of Canada by Cheryl Giesbrecht on behalf of the RCMP. The sworn affidavit of Astra Richardson-Pereirra retired public servant of the RCMP who worked in

Figure 50: Mandamus arguments 11

both the Major Crimes Unit and GIS has testified that the warrant does not follow RCMP protocol and that there is a second copy of every keystroke taken on any computer in Ottawa and the RCMP failed to provide this.

138. Amy Groothius and the Unknown Registrars are personally responsible for murder using the rules of the court to prevent unscientific mandates from being used to distribute a biological weapon in Canada and the United States and have directly affected the overthrow of the government of the United States and concealing the treason that occurred in 2020 that was a direct result of the engineering guidelines that provided the means to overthrow the government of the United States. Justice J. Zuk and the Registrar of Land Titles is directly responsible for the same.

D. **The Conspirators in the United States Courts and Other Agencies Have Demonstrated Actions That are Consistent With Treason Against the United States**

139. The unlawful rejection of the Supreme Court motion was necessary as the motion clearly demonstrated that the conditions of the Writ of Mandamus before the 10th Circuit were being met. With the motion on the Court record, it would be problematic for the 10th Circuit especially since it predicted punishment from the 10th Circuit. It also gave the corrupt agents in the 10th Circuit reason not to give the Applicant oral arguments as requested for the Mandamus, as he would have made those arguments in the hearing and referenced the 3300 page appendices leaving the judges virtually no room to deny the Mandamus. The panel officially violated the Convention against Torture and kept any mention of treason and the Invariable Pursuit of the Object from being on the court record.

140. On July 20, 2021 Circuit Judges Holmes, Matheson, and Eid of the United States Court of Appeals for the 10th Circuit abused their position as circuit court judges to use fraud to conceal *evidence of complaints made to law enforcement of the criminally negligent representation of the AGMP guidance issued by the SHA and crimes used to suppress its reporting* to deny the Writ of Mandamus.

Figure 51: Mandamus arguments 12

141. Article III, Section 3, Clause 1 of the UNITED STATES Constitution defines treason because it threatens the very foundation of the UNITED STATES OF AMERICA, the Inalienable Rights to Life, Liberty and the Pursuit of Happiness. This definition can and should be used for Canada as well.

142. The right to not be tortured is an inalienable right under the United Nations Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment. Any statement determined that was obtained of torture cannot be used in any proceeding other than to prove the person was tortured. There is compelling evidence that numerous statements were obtained by torture.

143. 18 U.S.C. § 3771 provides rights of the crime victim to be protected from the accused and since the Applicant was held by persons who have continually tortured and obstructed him, he has a right to be protected from them. The Applicant was not protected to conceal *evidence of complaints made to law enforcement of the criminally negligent representation of the AGMP guidance issued by the SHA and crimes used to suppress its reporting.*

144. As a United States Judge Lewis T. Babcock had an obligation to overlook any purported deficiency and examine forthwith the documents that purported federal treason. The judge used his position to obstruct justice and committed an overt act of treason. In addition to thi,s he deprived the Applicant of rights pursuant to 18 U.S.C. § 242 and the overt acts were party to 18 U.S.C. § 241. J. Babcock fraudulently stated that the motion "*does not include any claims, factual allegations or request for relief.*" The denial of the torture complaint under the Convention against Torture does allow for the prosecution of 18 U.S.C. § 241. *Treaty with foreign power was supreme law of land; Congress could provide punishment for its infraction on deprivation of or injury to right secured by it, as in case of ordinary law. In re Grand Jury (1886, DC Or) 11 Sawy 522, 26 F 749*. J. Babcock was exposed for corruption in a newspaper article, and admitted his corrupt actions.

145. The overt actions of Michael Duggan delineates a determined effort to deprive the Applicant of rights who is both an Alien and Black. Michael Duggan demonstrates that he is acting as a part of a conspiracy to prevent the enforcement of a United States Statute. It is reasonable that there is a criminal civil rights violation pursuant to 18 U.S.C. § 241. 18 USCS § 241 *does not require that*

Figure 52: Mandamus arguments 13

any overt act be shown. United States v Morado (1972, CA5 Tex) 454 F.2d 167, cert den (1972) 406 US 917, 32 L Ed 2d 116, 92 S Ct 1767.

146. Officer C. Jones covered for the crimes of Officer Blevins and the CBP officers and suggested that policy was resposible for the actions of Officer Blevins.

147. On August 2, 2021 U.S. Magistrate Judge Kristin L. Mix demonstrated that she was a conspirator to preventing the enforcement of a United States statute, when acting like she could not clearly read the statutes listed in the document before her. The actions of Magistrate Judge Mix and Gallagher in concert with the person in the Clerk's office demonstrates a conspiracy to prevent the enforcement of a United States statute. The continued detention of Jaime Naranjo-Hererra demonstrate that force is being used to prevent the enforcement of the statute as well.

148. There is overwhelming evidence of conspiracy, collusion, and complicity to torture, terrorism, crimes against humanity and numerous other crimes, and judicial interference.

E. **The Trans-National Invariable Pursuit of the Object**

149. It is indisputably clear that there has been a pattern of punishment towards the Applicant and his daughters in the judicial system in Canada and the United States. Including a severe level of judicial interference in the Supreme Court of the United States by rogue elements which includes without limitation Clara Houghtelling, Michael Duggan and Redmond K. Barnes. The foregoing treason by way of conspiracy which includes terrorism and shielding the rogue agents of ICU located in Saskatchewan, Canada who are co-opting a legitimate financial institution to fund the Invariable Pursuit of the Object. This conspiracy includes judges in the Court of Queen's Bench for Saskatchewan, and the Court of Appeal for Saskatchewan participating in and shielding mortgage fraud. The Court of Appeal for Saskatchewan has openly declared that the Constitution of Canada has no validity for children or those whose political views oppose the government in direct opposition to the Charter.

150. The Court of Appeal for Saskatchewan declared that children are not persons and should not be afforded the right of habeas corpus.

Figure 53: Mandamus arguments 14

151. The Invariable Pursuit of the Object can be traced through multiple courts in Canada and the United States. This includes the following actors without imitation, Justice R.W. Elson, Justice Barnes of the Federal Court of Canada, OWZW, Virgil Thomson, and Michael Griffin counsel for APEGS, Registrar Amy Groothius and her assistants, Justice J. A. Schwann, Kimberley A. Richardson, Clifford A. Holm, Lisa Silvester, Patricia J. Meiklejohn and Justice B.R. Hildebrandt, district court of Nevada Judge Jennifer Dorsey, Immigration Judge Glenn Baker.

152. U.S. Magistrate Judge Gordon P. Gallagher used fraud in order dated June 15, 2021 to conceal *documentation that contained evidence of complaints made to law enforcement of the criminally negligent representation of the AGMP guidance issued by the CDC and SHA; and crimes used to suppress its reporting.*

153. Immigration Judge Caley used fraud to conceal *documentation that contained evidence of complaints made to law enforcement of the criminally negligent representation of the AGMP guidance issued by the CDC and SHA; and crimes used to suppress its reporting.*

154. On September 21, 2021 Chief Judge Phillip A. Brimmer of the District Court of Colorado dismissed an action that presented evidence and supporting case law of treason. His overt actions are consistent with a conspiracy to prevent the enforcement of a United States statute. Treason can not be treated as a civil matter. Chief Judge Phillip A. Brimmer states "*Applicant does not allege that any arrests have been made or that the grand jury has returned an indictment.*" Included in the evidence is that there are open torture investigations in Canada, and that the evidence presented demonstrates that the actors in Canada and the United States are acting in concert. There is an obligation contained in article 5 of the Convention against Torture to prevent acts of torture and to "*take such measures as may be necessary to establish its jurisdiction over such cases where the alleged offender is present in any territory under its jurisdiction*". The Convention against Torture does not require arrests to be made for an investigation to commence. The Convention against Torture permits the person who alleges torture to present their evidence for the purposes of conducting an investigation.

Figure 54: Mandamus arguments 15

155. Chief Judge Phillip A. Brimmer called compelling evidence of torture, and treason "*frivolous*", "*groundless and vexatious*" and threatened to punish the Applicant for complaining of the torture and attempting to report treason. Chief Judge Phillip A. Brimmer is a traitor to the United States, and an enemy of the Crown as he is supporting the treasonous actors in Canada.

156. The Applicant was obstructed from reporting torture, conspiracy to commit treason, terrorism, and from presenting evidence of treason with United States citizen Robert A. Cannon.

157. Compelling evidence in 20-1815 in the Supreme Court of the United States demonstrates that the actions of all of these actors are deliberately working in concert. The obstruction of the motion allowed for the furtherance of the torture of the Applicant and allowed the mismanagement of the COVID emergency to continue unreported. Redmond K. Barnes, case analyst at the Supreme Court tampered with evidence from the Supreme Court of the United States by the Applicant and sent them to Jaime Naranjo-Hererra. The five affidavits of the torture at the Sweetgrass MT point of entry, gives compelling evidence based on the testimony of the Applicant and the witnesses of the events.

158. These events demonstrate that there has been a prior demand for the duty both to the RCMP and the Court of Queen's Bench for Saskatchewan, Court of Appeal for Saskatchewan, the Federal Court of Canada, the Department of Homeland Security, District Court of Colorado, United States Court of Appeals for the 10th Circuit, and the Supreme Court of the United States. The sheer number of complaints and evidence supplied proves that there has been prior demands and unreasonable delay.

> The delay in question was been far longer than the process required. There was an obligation to protect the complainants from any ill treatment from the complaint of torture, and neither the Applicant nor his daughter Karis have had any protection from the ill treatment arising from the complaint, and left Karis in the care of persons complicit to the torture. The public has had an unreasonable delay from the hindrance of criminal negligence complaints.
>
> The Applicant is not responsible for being tortured by the persons he complained to of being tortured and persecuted by. And he is not responsible for the courts and other parties committing mortgage fraud in the courts to further punish him and Karis. Karis is not responsible for the punishment that

Figure 55: Mandamus arguments 16

she has received because of the political opinion of her father the Applicant. The public is not responsible for being victimized by criminal negligence.

The Attorney General of Canada has not provided any satisfactory justification for the delay by the RCMP, or for the Federal Court of Canada. The Court of Queen's Bench for Saskatchewan has provided no satisfactory justification, nor has the Court of Appeal for Saskatchewan. There has been no investigation of the torture, and all evidence supplied by the Applicant has been ignored by all of the aforementioned parties. Evidence has been provided by the Attorney General of Canada that incriminates the RCMP, SHA and the Court of Queen's Bench for Saskatchewan in the torture of the Applicant and his daughter Karis. There is no reasonable justification for delaying the investigation of criminal neglegence complaints that have caused deaths of the public.

V. NO OTHER ADEQUATE REMEDY IS AVAILABLE TO THE APPLICANT

159. It is indisputably clear that the corrupt agents in the courts have denied lawful requests not to be tortured, persecuted, stop child trafficking and murdering the public and the RCMP have perpetrated a gross dereliction of duty that directly resulted in the vast majority of the suffering and the losses incurred by the Applicant, Karis her sister Kaysha F.N. Richardson and the public. The RCMP are the means by which Karis has been used to torture the Applicant, and the means by which Karis is being trafficked mortgage fraud and the treasonous, totalitarian orders of Justice R.W. Elson were issued. No other Court has examined the evidence and make a decision based on the facts and the law.

160. There is no other way to remedy these matters as this is a matter of precedent. Either the court gives remedy or military intervention by the United States and the latter option is not a reasonable way to obtain remedy.

161. The Unknown Registrars and Amy Groothius have thwarted all other attempts for Dale to exercise his rights and protect Karis from torture and being trafficked for the purposes of sexual and financial exploitation, and to protect the public from being murdered and deprived of their liberty. Without this motion it is probable that Dale will have more attempts made on his life and liberty, and the United States will send its military to put down the national security threat in Canada by force.

Figure 56: Mandamus arguments 17

VI. THE ORDER SOUGHT WILL BE OF SOME PRACTICAL VALUE OF EFFECT

162. The obvious nature of the obligation of the RCMP to stop the torture and to not be engaged in torture, mortgage fraud, bio-terrorism, treason child trafficking and numerous other crimes is blatantly obvious. The Registrar of Land Titles, nor rogue agents of the Courts not engaging in fraud is of practical value. The public not being subjected to criminal negligence is a clear example of practical value.

163. Stopping treason is of a practical effect, as is preventing a military intervention from the United States as that places innocent citizens at risk of being collateral casualties.

164. Upholding the Charter and not allowing corruption to flourish in the judicial system is of practical value.

VII. IN THE EXERCISE OF DISCRETION THERE IS NO EQUITABLE BAR TO THE RELIEF SOUGHT

165. The Applicant has done nothing but attempt to assert his lawful right not to be tortured and be free from criminal activity directed towards him his daughters and the public by multiple state and private actors in Canada and the United States. In spite of the gross systematic criminal actions taken against him, the Applicant has not responded in any like fashion towards any of the state or private actors. He has only used legal means to avail himself of the child trafficking for the purposes of financial and sexual exploitation, torture, mortgage fraud, crimes against humanity and other grievous crimes he and the public are being victimized by. The torture of a child to suppress the reporting of crime that affects the public is not justifiable by any means. No equitable bar exists to the relief sought.

166. There is no equitable bar to relieving the murder of the innocent.

167. There is no equitable bar to upholding the Charter or stopping the torture of Black people using the courts.

Figure 57: Mandamus arguments 18

VIII. BALANCE OF CONVENIENCE

168. Torture is an extreme prejudice that must be remedied, irreparable harm has been done to the Applicant, and most importantly the child Karis, who has had irreparable harm done to her because of being trafficked for the purposes of exploitation and other gross criminal activity. An infant child who was deprived of a development that is rightfully hers to use her as an instrument of torture is sick, inhumane, disgusting, reprehensible, vile, tyrannical and disgustingly criminal and there is no other reasonable consideration, other than to immediately remove the effects of the torture which also includes returning the habitual residence that was taken to torture the Applicant and separate him from Karis.

169. The public has a right not to be subjected to crimes.

170. Torture to affect the family matter is unreasonable and should never be sanctioned as a means to punish a political dissident.

171. The Applicant has a right not to be punished for whistle-blowing crimes and must have the child trafficking and other crimes against him stopped and are well within the balance of convenience.

CONCLUSION

172. Without this *Motion for Writ of Mandamus* granted, it will allow the extreme prejudice demonstrated by state actors in Canada and the United States to effectively use the courts to commit crimes and silence the Applicant, to violate the constitution, commit treason, and torture the Applicant and an innocent child. No family matter should be used as a means to murder members of the public, overthrow a government and cover terrorist activity.

Relief Sought

173. This *Motion for Writ of Mandamus* and *Prohibition* is made for

1. An order to compel the Assistant Commissioner Rhonda Blackmore of the RCMP and/or any of her agents operating in the jurisdiction of Saskatchewan;

   to issue arrest warrants for every person involved in the torture, criminal negligence, child trafficking and other related complaints in Canada and the United States;

Figure 58: Mandamus arguments 19

to remove Karis Kenna Nicole Richardson from the care of whomever she is with and deliver Karis to the Applicant or other such person as the Applicant shall decide, at a location to be determined by the Applicant, to comply with the Convention against Torture;

to seize the property located at 1292 95th, Street North Battleford, Saskatchewan, S9A 0G2 and arrest all parties involved in the mortgage fraud;

2. On order for the Saskatchewan Health Authority and the Ministry of Health to;

End all covid related mandates in the province of Saskatchewan effective immediately;

Remove the unscientific diagnosis associated with the torture of the Applicant;

Deliver all documentation relating to the Aerosol Generating Medical Procedures guidance at no cost to the Applicant

3. An order to compel the Executive Council of Saskatchewan to;

File and process the Application for Access for the Return of the Child Dated April 8, 2022;

4. An order to compel Amy Groothius to;

Place all communications between Dale J. Richardson on the court record;

Place all evidence and documents previously filed or attempted to be filed by Dale J. Richardson or any of his affiliates on the court record;

Recuse herself from any matter relating to Dale J. Richardson or any of his family members or affiliates;

5. An order to compel the Attorney General of Saskatchewan

to provide the Applicant with all the information requested in all of his access to information requests at no cost to the Applicant without any redaction;

to pay any and all costs associated with this motion, or any of the orders associated with it, and for the maintenance, insurance and any other cost of the property at 1292 95th, Street North Battleford until the resolution of the Appeal and any incidental matters associated with the matters subject to the mandamus and/or the appeal;

Figure 59: Mandamus arguments 20

To pay the legal costs of Applicant incurred from the Attorney General of Saskatchewan failure to do the public duty required by the office of the Attorney General of Saskatchewan;

To pay the legal costs of the Applicant for any actions relating to this mandamus

To pay the costs of a full report regarding the criminally negligent guidelines to the Applicant or other person that the Applicant shall decide.

2. An Order prohibiting Assistant Commissioner Rhonda Blackmore or any agent of the F-Division of the Royal Canadian Mounted Police from interfering with, harassing or torturing the Applicant; or attending any residence owned, occupied or regularly attended by the Applicant for any unlawful purposes and
3. An order prohibiting Jessica Karam from harassing, molesting, annoying, persecuting, torturing, interfering with the Applicant or trafficking his children;
4. An order prohibiting Jessica Karam from representing the public interests in this matter or any matter relating to the Applicant or his affiliates in the province of Saskatchewan;
5. An Order with dispensing with service and ordering electronic service for the Mandamus and CACV4048

ALL OF WHICH is submitted,

Sept 5, 2022

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DALE RICHARDSON

TO: ATTORNEY GENERAL OF CANADA
DEPARTMENT OF JUSTICE
410 22nd Street East, Suite 410

PRAIRIE REGIONAL OFFICE - SASKATOON
Fax: (306) 975-4030
Tel: (306) 518-0800

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Figure 60: Mandamus arguments 21

it. I do so without in any way resiling from the substantial body of precedent that says the Court's original jurisdiction with respect to prerogative relief should be exercised only very exceptionally.

[22] That said, I do not propose to address the merits of Mr. Richardson's application in any depth. His materials present a confusing mix of concerns about what he describes as systemic torture, criminally negligent implementation of "engineering controls used for the SARS-Cov-2" pandemic response, RCMP wrongdoings, unlawful arrests, improper actions taken by various members of the Court of King's Bench, this Court and the Federal Court, child trafficking and various crimes including treason, mortgage fraud, crimes against humanity and criminal negligence causing death. All things considered, Mr. Richardson has simply failed to coherently marshal or establish the facts and the law necessary to make out a case for the relief that he seeks.

[23] Mr. Richardson's application for prerogative relief is dismissed. There will be no order with respect to costs.

B. The Second Application

[24] Mr. Richardson's second application for prerogative relief was filed on September 18, 2022 [Second Application]. The respondents are identified as: (a) Assistant Commissioner Rhonda Blackmore of the Royal Canadian Mounted Police; (b) Jessica Karam; (c) the Ministry of Health; and (d) the Saskatchewan Health Authority. The relief sought by Mr. Richardson is set out as follows in his application:

> 173. This *Motion for Writ of Mandamus* and *Prohibition* is made for
>
> 1. An order to compel the Assistant Commissioner Rhonda Blackmore of the RCMP and/or any of her agents operating in the jurisdiction of Saskatchewan;
>
> to issue arrest warrants for every person involved in the torture, criminal negligence, child trafficking and other related complaints in Canada and the United States;
>
> to remove Karis Kenna Nicole Richardson from the care of whomever she is with and deliver Karis to the Applicant or other such person as the Applicant shall decide, at a location to be determined by the Applicant, to comply with the Convention against Torture;
>
> to seize the property located at 1292 95th, Street North Battleford, Saskatchewan, S9A 0G2 and arrest all parties involved in the mortgage fraud;
>
> 2. On order for the Saskatchewan Health Authority and the Ministry of Health to;
>
> End all covid related mandates in the province of Saskatchewan effective immediately;

Figure 61: Mandamus orders Court of Appeal for Saskatchewan (2022SKCA133) 1

Remove the unscientific diagnosis associated with the torture of the Applicant;

Deliver all documentation relating to the Aerosol Generating Medical Procedures guidance at no cost to the Applicant

3. An order to compel the Executive Council of Saskatchewan to;

File and process the Application for Access for the Return of the Child Dated April 8, 2022;

4. An order to compel Amy Groothius to;

Place all communications between Dale J. Richardson on the court record;

Place all evidence and documents previously filed or attempted to be filed by Dale J. Richardson or any of his affiliates on the court record;

Recuse herself from any matter relating to Dale J. Richardson or any of his family members or affiliates;

5. An order to compel the Attorney General of Saskatchewan

to provide the Applicant with all the information requested in all of his access to information requests at no cost to the Applicant without any redaction;

to pay any and all costs associated with this motion, or any of the orders associated with it, and for the maintenance, insurance and any other cost of the property at 1292 95th, Street North Battleford until the resolution of the Appeal and any incidental matters associated with the matters subject to the mandamus and/or the appeal;

To pay the legal costs of Applicant incurred from the Attorney General of Saskatchewan failure to do the public duty required by the office of the Attorney General of Saskatchewan;

To pay the legal costs of the Applicant for any actions relating to this mandamus

To pay the costs of a full report regarding the criminally negligent guidelines to the Applicant or other person that the Applicant shall decide.

2. An Order prohibiting Assistant Commissioner Rhonda Blackmore or any agent of the F-Division of the Royal Canadian Mounted Police from interfering with, harassing or torturing the Applicant; or attending any residence owned, occupied or regularly attended by the Applicant for any unlawful purposes and

3. An order prohibiting Jessica Karam from harassing, molesting, annoying, persecuting, torturing, interfering with the Applicant or trafficking his children;

4. An order prohibiting Jessica Karam from representing the public interests in this matter or any matter relating to the Applicant or his affiliates in the province of Saskatchewan;

5. An Order with dispensing with service and ordering electronic service for the Mandamus and CACV4048.

[25] This application suffers from the same central flaw as does the First Application, i.e., it fails to respect the Court's decisions concerning the exercise of its jurisdiction in relation to prerogative relief. Those decisions include, as noted above, a 2021 decision with respect to an earlier failed attempt by Mr. Richardson to obtain prerogative relief. However, as with the First

Figure 62: Mandamus orders Court of Appeal for Saskatchewan (2022SKCA133) 2

Application, it is in the interests of justice to deal with the substance of this application and to decide it on its merits.

[26] I do not intend to analyze the Second Application in any depth. Suffice it to say that Mr. Richardson's submissions, both written and oral, cover a broad and confusing range of matters from allegedly criminally negligent "Aerosol Generating Medical Procedures guidance", to what is said to be a "correlation between judicial actions, child trafficking for the purpose of exploitation and bio-terrorism", to the alleged "torturing and trafficking a child to conceal the distribution of a biological weapon", to an allegation that "registrars in multiple courts were used to permit crimes to occur in the courts", to a contention that "concealing the overthrow of the United States using court rules as an act of war and not in any way permissible".

[27] In short, Mr. Richardson has failed to advance a coherent evidentiary basis or legal rationale for the relief he seeks. His application must be dismissed. I would make no order as to costs.

IV. CONCLUSION

[28] As discussed above, the appeals in CACV3745 and CACV3798 are both dismissed with costs of $500 in each payable forthwith to Ms. Richardson. As well, the two applications for prerogative relief filed by Mr. Richardson in CACV4048 are dismissed. There is no order as to costs in relation to those matters.

"Richards C.J.S."
Richards C.J.S.

I concur. "Schwann J.A."
Schwann J.A.

I concur. "McCreary J.A."
McCreary J.A.

Figure 63: Mandamus orders Court of Appeal for Saskatchewan (2022SKCA133) 3

It is evident that the orders of the judges are not truthful. Dale J. Richardson was given 15 minutes to explain a 3,000 engineering report at argue the legal basis for the mandamus listed earlier in the documentation. The risk analysis suggested that there

was a high probability of the distribution of a biological weapon that was used to interfere with the territorial integrity of the United States and Canada and that the action of the Court of Appeal for Saskatchewan makes it virtually impossible that there was not the distribution of a biological weapon. Considering that the registrar who was named in the documentation to be arrested for her participation in treason against Canada and the overthrow of the duly elected government of the United States and the other crimes she participated in to conceal the aforementioned crimes had brought vexatious litigant proceedings against Dale J. Richardson is evidence of retaliation for reporting treason. The video of the hearing that day is in the possession of multiple law enforcement agencies and demonstrates the criminal actions of the judiciary in Saskatchewan and their role in concealing election fraud in the 2020 and 2022 elections in the United States.

A FURTHER DISCUSSION OF CRIMES IN THE CIVIL COURTS

The presence of criminal activity throughout multiple jurisdictions presents substantial problems, and an extreme risk. The level of criminal activity taking place within the civil courts tied the engineering report is a relationship that cannot be overlooked. The sheer number of criminal activities used to suppress the reporting of the crimes contained in the documentation delineates a relationship that cannot be ignored. There is a correlation between the reporting of criminal actions in the civil courts and crimes committed by the civil courts and suppression of the crimes through vexatious litigation. Based on the information contained in this preliminary report there is strong motive to commit crimes to avoid prosecution of the crimes contained in the documentation. Further research is demanded.

SUMMARY OF BRIEF ANALYSIS

The third matter demonstrates that the association of the child trafficking and the engineering report that exposes bio-terrorism were present in all three matters. The presence of this association in all three populations examined suggests that there is a strong correlation between the presence of child trafficking, the engineering report and the judicial actions in a court matter. The examination of the ideology present in the unwarranted state interference with Kaysha is present with the unwarranted interference with Karis. The main outlier is the 4,484,093% increase in the amount of pages of evidence and zero positive results produced in Dale's favour. This is compelling evidence that the presence of the engineering guidelines are the main factor in the exponential increase in evidence with extremely negative outcomes over what happened in 2001. The lack of accountability control systems in the Man-Sask Conference for the executive committee who effectively control the corporation and being tied to suppression of the engineering report that has caused loss of life is a correlation that cannot be ignored. The extreme conservative estimate to offset bias of the author still presents an absurdly high legal cost to asset ration in relation to the sale of the home tied to the unwarranted detention of Karis and it cannot be overlooked. From a risk assessment standpoint, this is an unacceptable risk as a person has incurred huge losses 3959% higher than the value of the property that was alleged to be too much to afford. This amount of legal cost to value of asset suggests that another objective is the purpose of the cost of litigation, and other sources of income outside of the reported income of the petitioner in DIV 70 of 2020 is being used to fund legal costs. This is a reasonable assumption based on the evidence presented. Further study in this matter is demanded

as the brief analysis suggests the operation of organized crime with an ideology of child trafficking for the purposes of financial and sexual exploitation tied to bioterrorism.

IMPACT OF IMPLEMENTATION

“Engineering controls for biohazards include built-in protective systems, equipment or supplies, which often require they be planned ahead of time and built into the design of a workspace. Common examples include ventilation systems (e.g., HVAC systems), (E Kevin Kelloway, Francis, Gatien, & Montgomery, 2019, pp. 157–158). The devices that were implemented by the HVAC technician were based on simple calculations from the table and asking the office person what the air flow of the unit was. A previous study by the author on the same brand of air purifiers uncovered that was a 37.5% difference between the rated airflow of the portable air purifier and the advertised airflow (Richardson, 2021b). In addition humidity control between 40-60% is ideal for infection controls and must be taken into account as well. Without knowing what the air mixing ratio is it is not possible to determine if the device will meet the required criteria to clean the air. In addition claims of the manufacturer and the actual performance is usually different. It is not recommended to used unproven technology for air cleaning. Complex mathematics is required to make the calculations for air mixing (Appendix F). Duct and exhaust placing also affect air mixing as well. There are numerous other factors that were not accounted for.

The timing of implementation of proper engineering controls could be the difference between millions of lives lost because of failure to act. Lessons learned from the SARS-Cov-2 response must be taken seriously and corrected and proper infection controls used.

Proper implementation will prevent loss of life from future biological attacks and secure the territorial integrity of Canada and the United States.

NEED FOR MORE RESEARCH

There is a need for more research in the area of aerosol transmission and air cleaner studies. Not all testing is equal and some testing can provide in accurate results for products that claim to have highly effective rates. A study has suggested that chamber size for air cleaners can have a substantial impact on performance rates that would not necessarily reflect performance in an actual setting (STEPHENS, GALL, HEIDARINEJAD, & FARMER, 2022).

Further research into this area is warranted as there appears to be a potential for a reduction in energy use from implementing infection controls. This implementation of the infection controls could reduce costs to clinics. This cost reduction could have wider spread applications. Cost reduction is a powerful motivating factor for widespread infection control implementation. Research into the cost of the risks associated with improper implementation of guidelines must be addressed.

Since there was a brief statistical analysis that have uncovered some disturbing associations and correlations, multi-disciplinary research into the matter is in the public interest to have conducted. Organized crime cannot and should not be allowed to exist within the judiciary or any branch of the government to shield crimes against the general public. The further analysis of risk needs to be investigated fully as there are some extremely concerning issues that have demonstrated actions consistent with overt acts of treason and high treason in Canada and treason in the United States. this investigation

is of extreme importance to every man, woman and child on planet earth as the liberty of all is at stake.

CONCLUSION

This is a critical area of research, as there is has been a serious economic impact in conjunction with the negative impacts on humanity arising from the SARS-Cov-2 pandemic, future pandemics that are ill prepared for could increase these costs. The evidence suggests that this study may contribute to the protection of the lives of people by reducing unnecessary exposure to SARS-Cov-2 and assist medical clinics to reduce the amount of HAI's. Keeping in mind the question of delivering cost effective infection controls to dental clinics, there is indications that this may be done. Evidence suggests that installing UVGI with MERV-13 filtration could have a positive financial impact by providing cost saving incentive to implement engineering infection controls. This study has addressed some issues with the gaps in research and has provided some insight that this is an area of research that should be explored. The study raises the question if improved maintenance management and financial decision making in small businesses have the potential to reduce energy use in other applications. The lack of having actual data from a dental clinic has created the need for a number of assumptions, and the time limitation has created a constraint on the research. This is a very brief overview of a complex issue to determine if further research is warranted. The outcome of the study suggests that cost benefits could increase the number of clinics following good engineering practices with respect to HVAC engineering controls for mitigation of SARS-

Cov-2.very brief overview of a complex issue to determine if further research is warranted. The outcome of the study suggests that cost benefits could increase the number of clinics following good engineering practices with respect to HVAC engineering controls for mitigation of SARS-Cov-2.

The argument can be made that it is up to the dental clinics to for the right professional for the job and are liable for any errors in judgment that they make. Under normal circumstances this would be true, however the information was displayed in a manner where it was impossible for them to know what the right choice is. The information was presented in a manner to skew the decisions in the wrong way. In documentation presented in Appendix A dental clinic owner went according to the guidance document, which according to the SHA was what they provided. The office manager did not. The office manager does not posses the competency to implement the guidance or to make intelligent decisions with respect to them. The presentation of the guidance is an extreme hazard of itself. It does not allow the dental clinic owner or an incompetent person to know of information that can skew the times on the chart. This information suggests that there are an unknown number of failures in clinics across Saskatchewan that is a disaster waiting to happen. There is no reason for guidance to be issued in this manner. The guidance must be scrapped and proper guidance with instructions on who constitutes a competent person to make decisions on implementing HVAC engineering controls. When taking into account the SHA with the aid of persons regulated by APEGS failed to identify hazards that contributed to poor risk assessment and ultimately making substantial contributions to negatively impact occupational health and safety of workplaces in Saskatchewan, an investigation should be conducted.

This preliminary research report has demonstrated that it is not possible for an HVAC technician to make decisions on air mixing when they are not familiar with the complicated nature of mixing air. The risk is unacceptable when the loss of human life could be the result. The risk to small business and the economy could be devastating when taking into account a worst case scenario. The issue of the misrepresentation of the mixing factor, and no information provided to the clinics to make them aware of their need of an engineer or technologist must be rectified. The widespread use of a faulty table has a substantial risk of spreading contagions and must be remedied immediately. The possibility of a biological agent being spread through these unknown failures to make an attack look like an outbreak is a risk that must be mitigated immediately. This rising threat of Monkeypox is a serious threat and cannot be treated with a "wait and see" attitude with no effective guidelines for proper engineering controls. Based on the deliberate actions of Pamela Heinrichs of the SHA and the subsequent actions taken to silence DSR Karis, Dale J. Richardson, and Kaysha F.N. Richardson, it is probable that Pamela Heinrichs and any other party acting with her are involved in bioterrorism. The actions taken on July 23, 2020 were calculated actions to prevent proper pandemic mitigation. The vexatious litigant proceeding in T-1404-20 is a demonstration of a premediated attack against a corporation who conducts essential service, to severely interfere with its operation. The actions of the Attorney General of Canada through various agents have demonstrated deliberate intent to interfere with the operation as well. The actions taken by Pamela Heinrichs have substantially increased the risk to the public and a failure of that magnitude at a critical time by deliberate steps to the parties attempting to prepare the public for an event that has the potential to have extreme life

threatening effects is unacceptable and should be punished to the fullest extent of the law.

The statistical evidence suggests the evidence of organized crime operating within the judicial system and other areas of the government and private sectors. This organization should be investigated as it has been observed that there is an ideology at work that has unlawfully removed children in a manner that delineates explicit facilitation of and direct exploitation. This is an observation that cannot be ignored especially when the observed relationships are correlated with the suppression of criminal investigations and facilitation of gross criminal activity. Compelling evidence of bioterrorist activity has been presented and action must be taken. The actions of the judiciary have demonstrated that the civil court system has been a primary mechanism to conceal the whisleblowing of a critical weakness introduced into the territory of Canada, the United States and worldwide by a number of entities and organizations listed in the documentation. Karis K.N. Richardson has been trafficked to provide the service of concealing treason in the United States, treason and high treason in Canada and crimes of aggression against a long list of countries in the world. Kaysha F.N. Richardson has been trafficked to provide the same service. It is highly probable that without intervention there will be massive loss of life based on the critical weaknesses created and the level of criminality demonstrated to conceal the critical weaknesses used to distribute a biological weapon and further distribution of biological weapons exploiting the critical weakness is extremely likely. In fact it is virtually impossible that a biological attack will not be staged exploiting the intentional weakness placed into numerous countries worldwide.

This critical weakness must be mitigated and the parties that are protecting the weaknesses must be stopped or the unlawful loss of life will continue.

A future multi-disciplinary study will cover these issues in more detail and expose crimes in order for the people to obtain justice.

DSR KARIS NORTH
CONSULTING INC.
ENGINEERING REIMAGINED

From: Dale J. Richardson
DSR Karis North Consulting Inc.
8 The Green, Ste A
Dover, DE 19901

January 11, 2023

To: Robert A. Cannon

Re: Revoking Access and Authorization

Dear Mr. Cannon,

DSR Karis North Consulting Inc., a Delaware Corporation hereby revokes all previous authorizations retroactively effective immediately. Mr. Cannon is no longer permitted to possess, retain, transmit, or anyway or by any means use any documentation, information or any such material or intellectual property owned or possessed by DSR Karis North Consulting Inc.. This transmittal is to inform you that your unlawful actions have been reported to law enforcement. DSR Karis North Consulting Inc. will seek prosecution to the fullest extent of the law.

Dale J. Richardson
Director
DSR Karis North Consulting Inc.

Certification of the Facts and Authenticity of the Documentation

I Dale J. Richardson attest that this report is based on my good faith opinion in the area of my training as a mechanical engineering technologist and any mention of legal issues are based on facts that relate to it and does not constitute legal advice and are mentioned for the purposes of analyzing risk. Consult a lawyer for legal advice.

Dale Richardson
Director
DSR Karis North Consulting Inc.

Affirmed before me at the City of Chestermere, in the Province of Alberta, in the Country of Canada, this 11th day of January, 2023.

Notary Public ANDREW G. KEIRSTEAD
Barrister, Solicitor and Notary Public

ANDREW G. KEIRSTEAD NOTARY PUBLIC PROVINCE OF ALBERTA

CONTACT INFORMATION AND ADDRESS
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Confirmation of witnessing Dale Richardson Signing Document on behalf of DSR Karis North Consulting Inc.

Affirmed before me at the City of Chestermere,
in the Province of Alberta,
this 11th day of January, 2023.

Notary Public for Province of Alberta
Being a Solicitor
ANDREW G. KEIRSTEAD
Barrister, Solicitor and Notary Public

Astra Richardson-Pereira

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ANDREW G. KEIRSTEAD NOTARY PUBLIC PROVINCE OF ALBERTA

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Royal Canadian Mounted Police / Gendarmerie royale du Canada

Your file / Votre référence
2407316

Our file / Notre référence
A-2022-03945

January 17, 2023

Mr. Dale RICHARDSON
1292 95th Street
North Battleford, 77, Saskatchewan S9A 0G2

Dear Mr. RICHARDSON:

This is in response to your request under the *Access to Information Act*, which was received by this office on May 2, 2022, to obtain:

> *a copy of a warrant for arrest issued on July 22, 2020 for resisting arrest in North Battleford Saskatchewan for an arrest that took place in July 23, 2020 in Battleford Saskatchewan. I received a redacted copy of the warrant in T-1404-20 of the federal Court of Canada. I want the unredacted version. Members involved are Cst. Reid, Cst. Parchewski, Cst. Reed. I am requesting information on file numbers 2020-898119 Torture, 2020-898911 criminal negligence, 2020-922562 Torture*

Based on the information provided, a search for records was conducted in North Battleford, Saskatchewan. Please note that all the information reviewed qualifies for exemption pursuant to subparagraphs16(1)(a)(i) and 16(1)(a)(ii) of the *Act*. We have, however, exercised the discretionary powers provided by the *Act* and have released some of the information. Enclosed is a copy of all the information to which you are entitled. A description of the exemptions can be found at: http://laws-lois.justice.gc.ca/eng/acts/A-1.

Please be advised that you are entitled to lodge a complaint with the Information Commissioner concerning the processing of your request within 60 days of receipt of this notice. In the event you decide to avail yourself of this right, your notice of complaint should be addressed to:

> Office of the Information Commissioner of Canada
> 30 Victoria Street, 7th Floor
> Gatineau, Quebec K1A 1H3
>
> For additional information on the complaint process, or to file a complaint online:
> https://www.oic-ci.gc.ca/en/submitting-complaint

Should you wish to discuss this matter further, you may contact Donna Billard by email at donna.billard@rcmp-grc.gc.ca. Please quote the file number appearing on this letter.

Regards,

Constance Colatti
for / Ray Duguay
Access to Information and Privacy Branch
Mailstop #61
73 Leikin Drive
Ottawa, Ontario K1A 0R2

Canada

Occurrence details

RCMP-GRC , HQ

Printed: 2022/06/23 14:35 by 000312461

Occurrence: **20201016013**

Occurrence details:

Report no.:	20201016013
Dispatch type:	Mental health act
Occurrence type:	Resists/obstructs peace officer 129 CC
Occurrence time:	2020/07/22 16:39 CST -
Reported time:	2020/07/22 16:39 CST
Place of offence:	1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)
Source:	Phone
Priority:	Urgent
Clearance status:	Cleared by charge/charge recommended
Concluded:	No
Concluded date:	
Summary:	Mental health warrant fro Dale Richardson. Member attend the QB court in Battleford and arrest Dale. Dale resisted arrest. Dale was brought to BUH. Dale later release and he left for Alberta. Cst. Lavoie
Remarks:	

Associated occurrences:

- Same event; Same person / 20201014836 / Mental Health Act - Other Activities (FIP) / 2020/07/22 13:41 CST / 20200722 19:41:21:060 UTC

Involved persons:

-

- RICHARDSON, DALE JAMES SODAT / Arrested; Charged / DOB: 1974/07/16 (47) Gender: Male (1292 95 STREET, NORTH BATTLEFORD, SK Canada (Division: F, District: Central, Detachment: Battleford Municipal, Zone: BFD, Atom: 2) (Voice) (306) 441-7010) FPS: 755786C DL:AB:150015170
  (Voice) (306) 441-4626
  (Cellular phone) (306) 392-0185
  (Cellular phone) (403) 472-2109
  (Voice) (403) 455-0406
  (Voice) (403) 207-1989

Involved addresses:

- 1052 101 STREET / Occurrence address / NORTH BATTLEFORD, Sask, Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)

Involved comm addresses:

Involved vehicles:

Involved officers:

- Supervising officer / #000098469 / PROS / Officer / F DIV INDIAN HEAD DET / 2021/02/21 / 20210221 --:--:--:--
- Assisting unit / F0584 / RCMP / Assignable / 2020/12/10 / 20201210 --:--:--:---
- Other assisting employee / #000203453 / PROS / Police other / F DIV BATTLEFORDS MUN DET / 2020/07/23 / 20200723 --:--:--:---
- Supervising officer / #000162614 / PROS / Officer / F DIV REGINA SPECIAL I-PROV / 2020/07/23 / 20200723 --:--:--:---
- Supervising officer / #000046384 / PROS / Officer / F DIV BATTLEFORDS MUN DET / 2020/07/23 / 20200723 --:--:--:---
- Primary unit / F0727 / RCMP / Assignable / 2020/07/22 / 20200722 --:--:--:---
- Dispatched officer; Lead investigator / #000276890 / PROS / Officer / F DIV BATTLEFORDS RURAL DET-TEAM C / 2020/07/22 / 20200722 --:--:--:---

Involved property:

Modus operandi:

Reports:

General report:

Occurrence: 20201016013 Resists/obstructs peace officer 129 CC @2020/07/22 16:39 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Me

Task: TK20202132910 [Init rpt - Closed] Due: 2020/11/30 18:43 EDT #009999997 CADINTERFACE, CAD ->#000276890 LAVOIE, GUILLAUME Richardson, Dale -- + Resist 20201016013CF1: 20201016013; RICHARDSON, D. (90425782) (Dale in '

Author: #000276890 LAVOIE, GUILLAUME *Report time:* 2020/07/23 11:41 CST
Entered by: #000276890 LAVOIE, GUILLAUME *Entered time:* 2020/07/23 11:41 CST
Remarks:
Narrative:
2020-07-22

Cst. Lavoie saw Dale Richardson leaving the driver seat of a beige 4 door car.

Cst. Lavoie approached Dale and told him that he was under arrest for an outstanding warrant under the mental heath act. Dale told Cst. Lavoie that he didn't had any authority to arrest him and started to back away towards the passenger back side of the car. Cst. Lavoie grabbed Dale's left arm and told him once again that he was under arrest and to put his hand behind his back. Dale grabbed on the

inside of his car with his right hand and refused to cooperate with Cst. Lavoie. Cst. Read and Cst. Parchewski arrived at the same time. Cst. Read attempt to get Dale to released the vehicle but Dale refused to cooperate. Cst. Read let Dale go
Cst. Lavoie kept control of Dale
Dale started to get more agitated Dale
start to try to pull away from Cst. Lavoie and the vehicle

, Cst. Reid and Cst. Genus arrived on scene to help. With the help of Cst. Reid and Cst. Read, Cst. Lavoie managed to pull Dale away from the vehicle. Cst. Parchewski managed to handcuff Dale left hand. Dale kept pulling away and resisting. Members finally got a hold of the right arm and handcuffed both arm behind his back. Cst. Lavoie searched Dale's pocket. Dale had a cellphone, a wallet and multiple USB stick. Dale said to give him to his agent
His belonging were given to as per his request.

Dale was place in the back of the vehicle but refused to get in properly so members had to pull him in the vehicle from the other side. Dale was then blocking the door with his feet so member had to pull him the other side to close the door and them pushed him back inside the truck to close the second door. Cst. Lavoie then read Dale his rights as per card and the police warning.

09:51 hrs: Arrest Dale Richardson for outstanding MHA warrant and resist arrest.

09:52 hrs: Right to counsel do you understand? Answer: "You have made an illegal arrest"

09:52 hrs: Do you wish call a lawyer now? Answer: "I am the power of attorney of DSR"

09:53 hrs: Police warning, do you understand? Answer: "My agent will be my representative"

Cst. Lavoie then brought Dale to the Battleford Union Hospital. Cst. Lavoie left the court house with Dale at 09:55hrs and arrived at the Battleford Union Hospital at 10:05 hrs.

Cst. Lavoie then went back to his police truck were Cst. Read was waiting with Dale. Cst. Lavoie open the back door to let Dale out. Cst. Lavoie asked Dale to come out. Dale refused and said to let him finish his prayer. Cst. Lavoie waited 5 minutes that Dale was done with his prayer. Cst. Lavoie then asked Dale again to come out of the Truck but Dale refused again and said that it was his rights to speak with Legal aid so he requested to speak with his agent. Dale gave two phone number and Cst. Reid tried both but none of them picked up. Cst. Lavoie gave one more chance to Dale to come out but he refused again. Cst. Lavoie and Cst. Genus both grabbed one of Dale's arm and forced him outside the vehicle. Dale kept refusing to follow member and members had to force him in the building by pulling on his arms. Once inside Dale was place in the conference room where the doctors tried to speak with him but it was unsuccesfull. Dale was then brought to a bedroom and with the help of medical staff was strapped to the bed, his handcuff were taken off and he was given medication with a needle by the medical staff.

Once Dale was release from the hospital, Dale left Battleford and now lives in Alberta.

General report:

Occurrence: 20201016013 Resists/obstructs peace officer 129 CC @2020/07/22 16:39 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Me

Task: TK20202141980 [Further inv. required - Closed] Due: 2020/07/28 11:25 CST #000276890 LAVOIE, GUILLAUME ->#000232417 READ, CASPER Supp + Notes 20201016013 Resists/obstructs peace officer 129 CC @2020/07/22 16:39 (1052 101 STREET, NORTH BATTLEFORD, SK

Author: #000232417 READ, CASPER *Report time:* 2020/07/23 12:41 CST
Entered by: #000232417 READ, CASPER *Entered time:* 2020/07/23 12:41 CST
Remarks:
Narrative:

2020-07-22

2020-07-23

Cst. Read and Cst. Lavioe went to the Queens Bench court house in Battleford to arrest Dale Richardson .
Dale Richardson had an Mental Health Warrant

Approach 0940hrs: Cst. Read and Cst. Parchewski drove over. Cst. Lavoie was trying to arrest Dale Richardson at the rear door of the Jetta. Dale Richardson can be seen grabbing the door and not going with Cst. Lavoie. was outside the court house filming the arrest Dale Richardson. Dale Richardson was raising his voice and would not listen to Cst. Lavioe. Cst. Read told Dale Richardson to stop resisting arrest and come with police. Cst. Read grabbed an arm of Dale Richardson to pull him away from the vehicle but Dale Richardson pulled away.

Cst. Read went back to help out with Cst. Lavoie dealing with Dale Richardson. Dale Richardson still not be compliant with commands that Cst. Lavoie was giving him. Dale Richardson was pulled away from the vehicle and place against the police vehicle. Dale Richardson still resisting arrest was place into handcuffs. Dale Richardson was searched The belonging in his pockets were given to his "Agent" that was video recording members. Dale Richardson was voluntary asked multiple times to step in the vehicle and would not. Dale Richardson needed police assistance to get into the vehicle. Dale Richardson was slid in the rear seat on his back to fit in. It took some time to manage Dale Richardson's feet front stopping the door from closing.
Cst. Lavoie gave Dale Richardson his right.

Dale Richardson was transfer to Battleford Union Hospital for an assessment.

Cst. Read
Battleford Rcmp.

Supplementary report:

Occurrence: 20201016013 Resists/obstructs peace officer 129 CC @2020/07/22 16:39 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Me

Task: TK20202141969 [Further inv. required - Closed] Due: 2020/07/28 11:24 CST
#000276890 LAVOIE, GUILLAUME ->#000291399 GENUS, CRESSAN Supp + Notes
20201016013 Resists/obstructs peace officer 129 CC @2020/07/22 16:39 (1052
101 STREET, NORTH BATTLEFORD,

Author: #000291399 GENUS, CRESSAN *Report time:* 2020/07/23 11:44 CST
Entered by: #000291399 GENUS, CRESSAN *Entered time:* 2020/07/23 11:44 CST
Remarks:
Narrative:
2020-07-23

0955 hrs - Cst. GENUS headed to QB court in Battleford to assist Cst. GUILLAUME with the arrest of Dale RICHARDSON under the Mental Health Act

0958 hrs - Upon arrival of Cst. GENUS RICHARDSON was physically resisting arrest from Cst. GUILLAUME and Cst. READ after many commands to comply with the arrest. RICHARDSON was still not cooperating and was giving the members a hard time to get into the back of the Police Car. Force by physically lifting RICHARDSON and escorting him into the back of the police car had to be applied to gain compliance. Members were eventually able to get RICHARDSON in the back of the police car and taken to BUH for assessment by mental health doctors.

1015 hrs - Cst. GENUS arrived at BUH mental health with Cst. GUILLAUME, Cst. READ and Cst. REID. RICHARDSON was still not being cooperative with members and had to be escorted physically by Cst. GENUS and Cst. GUILLAUME into the ward where mental health doctors were waiting to see RICHARDSON. RICHARDSON was placed in front of the doctors and was talking and interrupting the doctors. RICHARDSON would not give them a chance a speak. The doctors automatically admitted RICHARDSON.

1035 hrs - Cst. GENUS, Cst. GUILLAUME, Cst. READ and Cst. REID escorted RICHARDSON to a room where to a bed where he was restrained by members initially and then by bed restraints. The restraints were applied by the registered nurse on scene.

1045 hrs - RICHARDSON was given two injections by the registered nurse to have him sedated as he was being loud and would not calm down and cooperate. RICHARDSON will be admitted and placed on assessment status until he is able to be released.

CH.

Cst. Cressan Genus

Battlefords RCMP

Supplementary report:

Occurrence: 20201016013 Resists/obstructs peace officer 129 CC @2020/07/22 16:39 CST
(1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS
RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford
Municipal, Zone: BFD, Atom: C)) (Me

Task: TK20202141998 [Further inv. required - Closed] Due: 2020/07/28 11:26 CST
#000276890 LAVOIE, GUILLAUME ->#000261568 REID, ANDREW CH - Supp + Notes
20201016013 Resists/obstructs peace officer 129 CC @2020/07/22 16:39 (1052
101 STREET, NORTH BATTLEFOR

Author: #000261568 REID, ANDREW *Report time:* 2020/07/22 16:39 CST
Entered by: #000261568 REID, ANDREW *Entered time:* 2020/07/23 12:35 CST
Remarks:
Narrative:
2020/07/23 approx. 09:45 hrs

Cst. Reid was when Cst. Lavoie asked for assistance over the radio in arresting Dale Richardson as he was resisting and not listening to any commands. Cst. Lavoie was at the Queens Bench Court house in Battleford.

Cst. Reid arrived and seen Cst. Lavoie and Cst. Read struggling with trying to get Dale into custody. Dale was up against a vehicle and was refusing to put his hands behind his back. Dale had to be forced away from the vehicle and hands forced behind his back in order to be handcuffed. Once handcuffed Dale continued to resist and refused to get into the police vehicle. Dale kept saying that it was an illegal arrest and continued to resist. Members had to physically pick Dale up to get him into the police vehicle. Once inside Dale kept his legs straight, obstructing members from closing the door. Dale had to be pulled across the seat in order for the members to get the door closed.

approx. 10:08 hrs

Cst. Reid arrived at BUH to assist Cst. Parchewski, as well as Cst. Lavoie and Cst. Read as they were there with Dale Richardson who is being admitted to the mental health unit.

Cst. Reid then went with Cst. Lavoie, Cst. Read and Cst. Genus to assist with getting Dale from the police vehicle and into the mental health unit. Dale was refusing to get out of the police vehicle and cooperate. Members had to physically remove Dale from the police vehicle and escort him into the mental health unit.

Dale was brought into a conference room where the doctor wanted to speak with him regarding whats going on. Dale would not allow the doctor to speak and continually interupted him. The doctor gave the go ahead that he is to be admitted . Dale was then escorted to a room in the mental health unit. The nurses wanted Dale to be restrained using bed restraints until he is able to calm down. Dale had to be forced onto the bed and into the restraints.

11:06 hrs

12:21 hrs

CH

Cst. Andrew Reid

62198

Supplementary report:

Occurrence: 20201016013 Resists/obstructs peace officer 129 CC @2020/07/22 16:39 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Me

Task: TK20202141990 [Further inv. required - Closed] Due: 2020/07/28 11:26 CST #000276890 LAVOIE, GUILLAUME ->#000177365 BURNETT, CINDY Supp + Notes 20201016013 Resists/obstructs peace officer 129 CC @2020/07/22 16:39 (1052 101 STREET, NORTH BATTLEFORD,

Author: #000177365 BURNETT, CINDY *Report time:* 2020/07/23 15:41 CST
Entered by: #000177365 BURNETT, CINDY *Entered time:* 2020/07/23 15:41 CST
Remarks:
Narrative:
2020-07-23

Richardson's Jetta could be seen turning north to the court house. Cst. Parchewski and Cst. Read attended to assist Cst. Lavoie.

Cst. Parchewski saw Cst. Lavoie trying to arrest and place Dale into custody, however, Dale was resisting. Cst Lavoie from placing Dale into custody.

Dale who was resisting arrest.

Cst. Parchewski and Cst. Read assisted Cst. Lavoie and Cst. Reid to secure Dale. Cst. Genus also showed up on scene to assist.

C. L. PARCHEWSKI, Cst.

Supplementary report:

Occurrence: 20201016013 Resists/obstructs peace officer 129 CC @2020/07/22 16:39 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Me

Task: TK20202132910 [Init rpt - Closed] Due: 2020/11/30 18:43 EDT #009999997 CADINTERFACE, CAD ->#000276890 LAVOIE, GUILLAUME Richardson, Dale -- + Resist 20201016013CF1: 20201016013; RICHARDSON, D. (90425782) (Dale in

Author: #000162614 ROY, BURTON *Report time:* 2020/07/31 12:46 CST
Entered by: #000162614 ROY, BURTON *Entered time:* 2020/07/31 12:46 CST
Remarks: Supervisor review
Narrative:
2020-07-31

Cst. B Roy A/Cpl

2020-10-28

SOC has left the province

Cst. B Roy A/Cpl

Ext. doc. occ report [PDF, 149.36 KB]:

Occurrence: 20201016013 Resists/obstructs peace officer 129 CC @2020/07/22 16:39 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Me

Task: TK20202141969 [Further inv. required - Closed] Due: 2020/07/28 11:24 CST #000276890 LAVOIE, GUILLAUME ->#000291399 GENUS, CRESSAN Supp + Notes 20201016013 Resists/obstructs peace officer 129 CC @2020/07/22 16:39 (1052 101 STREET, NORTH BATTLEFORD,

Author: #000291399 GENUS, CRESSAN *Report time:* 2020/07/23 12:11 CST
Entered by: #000291399 GENUS, CRESSAN *Entered time:* 2020/07/23 12:11 CST
Person:
Address:
Vehicle:
Officer:
Remarks:

Ext. doc. occ report [PDF, 59.33 KB]:

Occurrence: 20201016013 Resists/obstructs peace officer 129 CC @2020/07/22 16:39 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Me

Task: TK20202141998 [Further inv. required - Closed] Due: 2020/07/28 11:26 CST #000276890 LAVOIE, GUILLAUME ->#000261568 REID, ANDREW CH - Supp + Notes 20201016013 Resists/obstructs peace officer 129 CC @2020/07/22 16:39 (1052 101 STREET, NORTH BATTLEFOR

Author: #000261568 REID, ANDREW *Report time:* 2020/07/22 16:39 CST
Entered by: #000261568 REID, ANDREW *Entered time:* 2020/07/23 13:18 CST
Person:
Address:
Vehicle:
Officer:
Remarks:

Ext. doc. occ report [PDF, 296.56 KB]:

Occurrence: 20201016013 Resists/obstructs peace officer 129 CC @2020/07/22 16:39 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Me

Task: TK20202132910 [Init rpt - Closed] Due: 2020/11/30 18:43 EDT #009999997 CADINTERFACE, CAD ->#000276890 LAVOIE, GUILLAUME Richardson, Dale -- + Resist 20201016013CF1: 20201016013; RICHARDSON, D. (90425782) (Dale in

Author: #000276890 LAVOIE, GUILLAUME *Report time:* 2020/07/23 15:56 CST
Entered by: #000276890 LAVOIE, GUILLAUME *Entered time:* 2020/07/23 15:55 CST
Person:
Address:
Vehicle:
Officer:
Remarks:

Ext. doc. occ report [PDF, 255.17 KB]:

Occurrence: 20201016013 Resists/obstructs peace officer 129 CC @2020/07/22 16:39 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Me

Task: TK20202146603 [Other rpt - Closed] Due: 2020/07/28 16:11 CST #000203453 CARRUTHERS, CRYSTAL ->#000232417 READ, CASPER NOTES ON D RICHARDSON FILE 20201016013 Resists/obstructs peace officer 129 CC @2020/07/22 16:39 (1052 101 STREET, NORTH BATTLEFORD

Author: *Report time:* 2020/07/23 16:12 CST
Entered by: #000203453 CARRUTHERS, CRYSTAL *Entered time:* 2020/07/23 16:11 CST
Person:
Address:
Vehicle:
Officer:
Remarks:

Ext. doc. occ report [PDF, 226.64 KB]:

Occurrence: 20201016013 Resists/obstructs peace officer 129 CC @2020/07/22 16:39 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Me

Task:
Author: PARCHEWSKI.C. *Report time:* 2020/07/23 19:34 CST
Entered by: #000315663 FISHER, HANA *Entered time:* 2020/07/23 19:32 CST

Person:
Address:
Vehicle:
Officer:
Remarks:

Ext. doc. occ report [DOCX, 12.14 KB]:

Occurrence: 20201016013 Resists/obstructs peace officer 129 CC @2020/07/22 16:39 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Me

Task: TK20203763110 [Other rpt - <<Overdue>> Rework] Due: 2022/04/05 00:00 CDT #000162614 ROY, BURTON ->F DIV BATTLEFORDS 20201016013 Resists/obstructs peace officer 129 CC @2020/07/22 16:39 (1052 101 STREET, NORTH B

Author:
Entered by: #000059878 SAWRENKO, COLIN
Report time: 2020/12/10 07:25 CST
Entered time: 2020/12/10 07:25 CST
Person:
Address:
Vehicle:
Officer:
Remarks:

Ext. doc. occ report [PDF, 1.81 MB]:

Occurrence: 20201016013 Resists/obstructs peace officer 129 CC @2020/07/22 16:39 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Me

Task: TK20221802487 [Other - Closed] Due: 2022/06/20 00:00 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 20201016013 Resists/obstructs peace officer 129 CC @2020/07/22 16:39 (1052 101 STREET, NORTH BATTLEF

Author:
Entered by: #000165620 RADDYSH, LAURIE
Report time: 2022/06/20 16:31 CST
Entered time: 2022/06/20 16:30 CST
Person:
Address:
Vehicle:
Officer:
Remarks:

Ext. doc. occ report [PDF, 2.25 MB]:

Occurrence: 20201016013 Resists/obstructs peace officer 129 CC @2020/07/22 16:39 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Me

Task: TK20221802487 [Other - Closed] Due: 2022/06/20 00:00 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 20201016013 Resists/obstructs peace officer 129 CC @2020/07/22 16:39 (1052 101 STREET, NORTH BATTLEF

Author:
Entered by: #000165620 RADDYSH, LAURIE
Report time: 2022/06/20 16:32 CST
Entered time: 2022/06/20 16:31 CST

Person:
Address:
Vehicle:
Officer:
Remarks:

Ext. doc. occ report [PDF, 1.78 MB]:

Occurrence: 20201016013 Resists/obstructs peace officer 129 CC @2020/07/22 16:39 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Me

Task: TK20221802487 [Other - Closed] Due: 2022/06/20 00:00 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 20201016013 Resists/obstructs peace officer 129 CC @2020/07/22 16:39 (1052 101 STREET, NORTH BATTLEF

Author: *Report time:* 2022/06/20 16:33 CST
Entered by: #000165620 RADDYSH, LAURIE *Entered time:* 2022/06/20 16:32 CST
Person:
Address:
Vehicle:
Officer:
Remarks:

Ext. doc. occ report [PDF, 1.89 MB]:

Occurrence: 20201016013 Resists/obstructs peace officer 129 CC @2020/07/22 16:39 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Me

Task: TK20221802487 [Other - Closed] Due: 2022/06/20 00:00 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 20201016013 Resists/obstructs peace officer 129 CC @2020/07/22 16:39 (1052 101 STREET, NORTH BATTLEF

Author: *Report time:* 2022/06/20 16:33 CST
Entered by: #000165620 RADDYSH, LAURIE *Entered time:* 2022/06/20 16:33 CST
Person:
Address:
Vehicle:
Officer:
Remarks:

Ext. doc. occ report [PDF, 266.86 KB]:

Occurrence: 20201016013 Resists/obstructs peace officer 129 CC @2020/07/22 16:39 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Me

Task: TK20221802487 [Other - Closed] Due: 2022/06/20 00:00 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 20201016013 Resists/obstructs peace officer 129 CC @2020/07/22 16:39 (1052 101 STREET, NORTH BATTLEF

Author: *Report time:* 2022/06/20 16:34 CST

Entered by: #000165620 RADDYSH, LAURIE *Entered time:* 2022/06/20 16:34 CST
Person:
Address:
Vehicle:
Officer:
Remarks:

Crown Brief Cover

Police service: RCMP-GRC
Police case ID: 20201016013CF1 *Occurrence #(s):* 20201016013
Regina vs. RICHARDSON, D.
OIC: #000276890 LAVOIE, GUILLAUME
Case class.:

Accused name: *RICHARDSON, DALE JAMES SODAT*
Birth date: 1974/07/16 *Criminal record:*

Charge	Offence date	YP status
CC 129(a) Resists/obstruct peace officer	2020/07/22	Adult

Crown Brief - Confidential

RCMP-GRC, HQ

Valid as of 2022/06/23 14:40:10
Printed by #000312461 PEINSZNSKI, PAIGE

Crown Brief Cover

Police case ID: *20201016013CF1* *Occurrence #(s):* *20201016013*

Regina vs. RICHARDSON, D.

OIC: *#000276890 LAVOIE, GUILLAUME*

Case class.:

Accused name: *RICHARDSON, DALE JAMES SODAT*
Birth date: *1974/07/16* *Criminal record:* *Yes*

Charge	Offence date	YP status	Occurrence
CC 129(a) Resists/obstruct peace officer	*2020/07/22*	*Adult*	*20201016013*

General Occurrence Report

Occurrence:	***20201016013 Resists/obstructs peace officer 129 CC @2020/07/22 16:39 CST***

Author: #000276890 LAVOIE, GUILLAUME *Report time:* 2020/07/23 11:41 CST
Entered by: #000276890 LAVOIE, GUILLAUME *Entered time:* 2020/07/23 11:41 CST
Remarks:

Narrative:

2020-07-22

2020-07-23

Around 09:40 hrs: Cst. Read updated Cst. Lavoie that Dale vehicle was pulling in the parking lot of the court house. Cst. Lavoie saw Dale Richardson leaving the driver seat of a beige 4 door car.

Cst. Lavoie approached Dale and told him that he was under arrest for an outstanding warrant under the mental heath act. Dale told Cst. Lavoie that he didn't had any authority to arrest him and started to back away towards the passenger back side of the car. Cst. Lavoie grabbed Dale's left arm and told him once again that he was under arrest and to put his hand behind his back. Dale grabbed on the inside of his car with his right hand and refused to cooperate with Cst. Lavoie. Cst. Read and Cst. Parchewski arrived at the same time. Cst. Read attempt to get Dale to released the vehicle but Dale refused to cooperate.

Cst. Read let Dale go Cst. Lavoie kept control of Dale
Dale started to get more agitated
Dale start to try to pull away from Cst. Lavoie and the vehicle The Sheriff came to help Cst. Lavoie in controlling Dale.
Cst. Reid and Cst. Genus arrived on scene Cst. Reid and Cst. Read, Cst. Lavoie managed to pull Dale away from the vehicle. Cst. Parchewski managed to handcuff Dale left hand. Dale kept pulling away and resisting. Members finally got a hold of the right arm and handcuffed both arm behind his back. Cst. Lavoie searched Dale's pocket. Dale had a cellphone, a wallet and multiple USB stick. Dale said to give him to his agent . His belonging were given to as per his request.

Dale was place in the back of the vehicle but refused to get in properly so members had to pull him in the vehicle from the other side. Dale was then blocking the door with his feet so member had to pull him the other side to close the door and them pushed him back inside the truck to close the second door. Cst. Lavoie then read Dale his rights as per card and the police warning.

09:51 hrs: Arrest Dale Richardson for outstanding MHA warrant and resist arrest.

09:52 hrs: Right to counsel do you understand? Answer: "You have made an illegal arrest"

09:52 hrs: Do you wish call a lawyer now? Answer: "I am the power of attorney of DSR"

09:53 hrs: Police warning, do you understand? Answer: "My agent will be my representative"

Cst. Lavoie then brought Dale to the Battleford Union Hospital. Cst. Lavoie left the court house with Dale at 09:55hrs and arrived at the Battleford Union Hospital at 10:05 hrs.

Cst. Lavoie then went back to his police truck were Cst. Read was waiting with Dale. Cst. Lavoie open the back door to let Dale out. Cst. Lavoie asked Dale to come out. Dale refused and said to let him finish his prayer. Cst. Lavoie waited 5 minutes that Dale was done with his prayer. Cst. Lavoie then asked Dale again to come out of the Truck but Dale refused again and said that it was his rights to speak with Legal aid so he requested to speak with his agent. Dale gave two phone number and Cst. Reid tried both but none of them picked up. Cst. Lavoie gave one more chance to Dale to come out but he refused again. Cst. Lavoie and Cst. Genus both grabbed one of Dale's arm and forced him outside the vehicle. Dale kept refusing to follow member and members had to force him in the building by pulling on his arms. Once inside Dale was place in the conference room where the doctors tried to speak with him but it was unsuccesfull. Dale was then brought to a bedroom and with the help of medical staff was strapped to the bed, his handcuff were taken off and he was given medication with a needle by the medical staff.

Once Dale was release from the hospital, Dale left Battleford and now lives in Alberta.

General Occurrence Report

Occurrence:	**20201016013 Resists/obstructs peace officer 129 CC @2020/07/22 16:39 CST**

Author: #000232417 READ, CASPER
Entered by: #000232417 READ, CASPER
Remarks:

Report time: 2020/07/23 12:41 CST
Entered time: 2020/07/23 12:41 CST

Narrative:
2020-07-22

2020-07-23

Cst. Read and Cst. Lavioe went to the Queens Bench court house in Battleford to arrest Dale Richardson
Dale Richardson had an Mental Health Warrant

Cst. Read saw the Jetta Belonging to turning on 3rd ave towards toe court house.

Approach 0940hrs: Cst. Read and Cst. Parchewski drove over. Cst. Lavoie was trying to arrest Dale Richardson at the rear door of the Jetta. Dale Richardson can be seen grabbing the door and not going with Cst. Lavoie. Kaysha Richardson was outside the court house filming the arrest Dale Richardson. Cst. Read went to help Cst. Lavoie because Dale Richardson was raising his voice and would not listen to Cst. Lavioe. Cst. Read told Dale Richardson to stop resisting arrest and come with police. Cst. Read grabbed an arm of Dale Richardson to pull him away from the vehicle but Dale Richardson pulled away.

Cst. Read went back to help out with Cst. Lavoie dealing with Dale Richardson. Dale Richardson still not be compliant with commands that Cst. Lavoie was giving him. Cst. Reid and Cst. Genus arrived to help. Dale Richardson was pulled away from the vehicle and place against the police vehicle. Dale Richardson still resisting arrest was place into handcuffs. Dale Richardson was searched The belonging in his pockets were given to his "Agent" that was video recording members. Dale Richardson was voluntary asked multiple times to step in the vehicle and would not. Dale Richardson needed police assistance to get into the vehicle. Dale Richardson was slid in the rear seat on his back to fit in. It took some time to manage Dale Richardson's feet front stopping the door from closing.
Cst. Lavoie gave Dale Richardson his right.

Dale Richardson was transfer to Battleford Union Hospital for an assessment.

Cst. Read
Battleford Rcmp.

Supplementary Occurrence Report

Occurrence:	***20201016013 Resists/obstructs peace officer 129 CC @2020/07/22 16:39 CST***

Author: #000291399 GENUS, CRESSAN *Report time:* 2020/07/23 11:44 CST
Entered by: #000291399 GENUS, CRESSAN *Entered time:* 2020/07/23 11:44 CST
Remarks:

Narrative:

2020-07-23

0955 hrs - Cst. GENUS headed to QB court in Battleford to assist Cst. GUILLAUME with the arrest of Dale RICHARDSON under the Mental Health Act as there was a warrant for his arrest.

0958 hrs - Upon arrival of Cst. GENUS RICHARDSON was physically resisting arrest from Cst. GUILLAUME and Cst. READ after many commands to comply with the arrest. RICHARDSON was still not cooperating and was giving the members a hard time to get into the back of the Police Car. Force by physically lifting RICHARDSON and escorting him into the back of the police car had to be applied to gain compliance. Members were eventually able to get RICHARDSON in the back of the police car and taken to BUH for assessment by mental health doctors.

1015 hrs - Cst. GENUS arrived at BUH mental health with Cst. GUILLAUME, Cst. READ and Cst. REID. RICHARDSON was still not being cooperative with members and had to be escorted physically by Cst. GENUS and Cst. GUILLAUME into the ward where mental health doctors were waiting to see RICHARDSON. RICHARDSON was placed in front of the doctors and was talking and interrupting the doctors. RICHARDSON would not give them a chance a speak. The doctors automatically admitted RICHARDSON.

1035 hrs - Cst. GENUS, Cst. GUILLAUME, Cst. READ and Cst. REID escorted RICHARDSON to a room where to a bed where he was restrained by members initially and then by bed restraints. The restraints were applied by the registered nurse on scene.

1045 hrs - RICHARDSON was given two injections by the registered nurse to have him sedated as he was being loud and would not calm down and cooperate. RICHARDSON will be admitted and placed on assessment status until he is able to be released.

CH.

Cst. Cressan Genus

Battlefords RCMP

Supplementary Occurrence Report

Occurrence:	***20201016013 Resists/obstructs peace officer 129 CC @2020/07/22 16:39 CST***

Author: #000261568 REID, ANDREW
Entered by: #000261568 REID, ANDREW
Remarks:

Report time: 2020/07/22 16:39 CST
Entered time: 2020/07/23 12:35 CST

Narrative:

2020/07/23 approx. 09:45 hrs

Cst. Reid was when Cst. Lavoie asked for assistance over the radio in arresting Dale Richardson as he was resisting and not listening to any commands. Cst. Lavoie was at the Queens Bench Court house in Battleford.

Cst. Reid arrived and seen Cst. Lavoie and Cst. Read struggling with trying to get Dale into custody. Dale was up against a vehicle and was refusing to put his hands behind his back. Dale had to be forced away from the vehicle and hands forced behind his back in order to be handcuffed. Once handcuffed Dale continued to resist and refused to get into the police vehicle. Dale kept saying that it was an illegal arrest and continued to resist. Members had to physically pick Dale up to get him into the police vehicle. Once inside Dale kept his legs straight, obstructing members from closing the door. Dale had to be pulled across the seat in order for the members to get the door closed.

approx. 10:08 hrs

Cst. Reid arrived at BUH to assist Cst. Parchewski, as well as Cst. Lavoie and Cst. Read as they were there with Dale Richardson who is being admitted to the mental health unit.

Cst. Reid then went with Cst. Lavoie, Cst. Read and Cst. Genus to assist with getting Dale from the police vehicle and into the mental health unit. Dale was refusing to get out of the police vehicle and cooperate. Members had to physically remove Dale from the police vehicle and escort him into the mental health unit.

Dale was brought into a conference room where the doctor wanted to speak with him regarding whats going on. Dale would not allow the doctor to speak and continually interupted him. The doctor gave the go ahead that he is to be admitted . Dale was then escorted to a room in the mental health unit. The nurses wanted Dale to be restrained using bed restraints until he is able to calm down. Dale had to be forced onto the bed and into the restraints.

11:06 hrs

12:21 hrs

CH

Cst. Andrew Reid

62198

Supplementary Occurrence Report

Occurrence:	***20201016013 Resists/obstructs peace officer 129 CC (@2020/07/22 16:39 CST***

Author: #000177365 BURNETT, CINDY
Entered by: #000177365 BURNETT, CINDY
Report time: 2020/07/23 15:41 CST
Entered time: 2020/07/23 15:41 CST
Remarks:

Narrative:

2020-07-23

Jetta could be seen turning north to the court house. Cst. Parchewski and Cst. Read attended to assist Cst. Lavoie.

Cst. Parchewski saw Cst. Lavoie trying to arrest and place Dale into custody, however, Dale was resisting.
Cst Lavoie from placing Dale into custody.

Dale who was resisting arrest.

C. L. PARCHEWSKI, Cst.

Supplementary Occurrence Report

Occurrence:	***20201016013 Resists/obstructs peace officer 129 CC @2020/07/22 16:39 CST***

Author: *#000162614 ROY, BURTON*
Entered by: *#000162614 ROY, BURTON*
Remarks: *Supervisor review*

Report time: *2020/07/31 12:46 CST*
Entered time: *2020/07/31 12:46 CST*

Narrative:

2020-07-31

Cst. B Roy A/Cpl

2020-10-28

SOC has left the province

Cst. B Roy A/Cpl

Occurrence details

RCMP-GRC , HQ

Printed: 2022/06/23 14:45 by 000312461

Occurrence: **2020898119**

Occurrence details:

Report no.:	2020898119
Dispatch type:	
Occurrence type:	Assistance to General Public
Occurrence time:	2020/07/03 15:43 CST -
Reported time:	2020/07/03 15:43 CST
Place of offence:	1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)
Source:	
Priority:	Routine
Clearance status:	Complete - solved (non-criminal)
Concluded:	Yes
Concluded date:	2020/07/14
Summary:	Dale Richardson attended the office to make various new complaints involving Domestic Abuse, Extorsion, Harrasement etc. Com attended with two other individuals and all are video taping at front counter. Various unrelated materials have been dropped off.(lmk)
Remarks:	

Associated occurrences:

- Same person; Similar MO / 2020922562 / Information File / 2020/07/07 16:03 CST / 20200707 22:03:16:547 UTC
- Same person / 2020898911 / Assistance to General Public / 2020/07/03 17:38 / 20200703 21:38:32:000 UTC

Involved persons:

- RICHARDSON, DALE JAMES SODAT / Complainant / DOB: 1974/07/16 (47) Gender: Male (1292 95 STREET, NORTH BATTLEFORD, SK Canada (Division: F, District: Central, Detachment: Battleford Municipal, Zone: BFD, Atom: 2) (Voice) (306) 441-7010) FPS: 755786C DL:AB:150015170
  (Voice) (306) 441-4626
  (Cellular phone) (306) 392-0185
  (Cellular phone) (403) 472-2109
  (Voice) (403) 455-0406
  (Voice) (403) 207-1989

Involved addresses:

- 1052 101 STREET / Occurrence address / NORTH BATTLEFORD, Sask, Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)

Involved comm addresses:

Involved vehicles:

Involved officers:

- Supervising officer / #000046384 / PROS / Officer / F DIV BATTLEFORDS MUN DET / 2020/07/14 / 20200714 --:--:--:---
- Primary unit / F0584 / RCMP / Assignable / 2020/07/03 / 20200703 --:--:--:---
- Lead investigator / #000162614 / PROS / Officer / F DIV REGINA SPECIAL I-PROV / 2020/07/03 / 20200703 --:--:--:---

Involved property:

Modus operandi:

Reports:

General report:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Dale Richardson att

Task: TK20201902638 [Init rpt - Closed] Due: 2020/07/30 15:46 CST #000122014 KNOWLES, LISA ->#000162614 ROY, BURTON [Low] CH*** 2020898119 Assistance to General Public @2020/07/03 15:43 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DE

Author: #000162614 ROY, BURTON
Entered by: #000162614 ROY, BURTON
Report time: 2020/07/04 07:45 CST
Entered time: 2020/07/04 07:45 CST
Remarks:
Narrative:

2020-07-03 15:30 Hrs. (Aprox)

Writer was supervising on dayshift and was advised Dale Richardson was at the front counter. He was wanting to report domestic abuse, extorsion, harassment ect. Writer was further advised that he had two people with him all including Richardson had cell phones out and were video recording people as they passed the front counter.

Writer attended to the front counter and spoke with Richardson. He began to try to point the conversation to the documents he had in his hands and began trying to steer the conversation and have a quazy interview in the front counter prior to any information gathering occurring. Writer stopped him and told him writer was given some information as to why he was here however for writer to start an investigation writer would need to take a statement from him. Writer told Richardson that he could attend to the interview room and provide an audio video statement. Richardson instantly interrupted writer and said that the only way he was going to come into the detachment was with the other 2 people in the lobby. Cst. Roy told him that was not going to happen. Richardson said he was not going to go anywhere with writer.

Writer then advised him that he could write out his statement and provide it. Richardson was provided with a clipboard and pad of paper and pen. Richardson handed a pile of papers to writer and said it was evidence to support his charges. Writer asked him if those were for writer. Richardson stated that writer was to photocopy them and return them. Writer had the papers copied and returned

Richardson's papers to him. Writer told Richardson that an interview room would be set up for him to provide a statement if he did not wish to write out the statement (Writer set up #124 and turned on the recorder). Richardson protested saying that he had ADHD and that he was not going to come into the detachment and that writer was not willing to take his complaint. Writer again told him to come in to the detachment and that writer would provide him a copy of the statement again Richardson refused saying that we could do the interview in the front lobby. Writer told him that the lobby was public and that it was not going to happen there. Richardson then said he wanted to do it in front of the detachment. Writer explained that the front of the detachment was as public as the lobby. Richardson agreed to attend to the rural parking lot.

16:12 Hrs
Writer took a statement from Richardson he provided the following information:

Richardson began saying that he had a number of complaints that he wanted to make starting with a mediation that occurred at the 7th day adventist church in February.

When asked directly what the allegations were Richardson began to shuffle papers and said were going to begin here. (not answering the question he begins a story)

Richardson says that his wife had an incident at the 7th day adventist church on the 15th of February which the RCMP was involved. His daughter made a complaint about that yesterday regarding sexual assault.

Richardson stated wife hates his oldest daughter and there was an argument between the two of them over access of there youngest child. There was a situation at the church where she was yelling at him and church members intervene.

Richardson left the residence and went to Calgary to stay with family. When he returned his wife had changed the locks.

Richardson aledges that his wife had assaulted him "several" times and stated that he has emails that can prove it.

Richardson continued talking about civil matters between the church and him. He further spoke about family law matters between his wife and him.

16:28 Hrs. (changed battery in recorder)

Richardson stated that he is in duress and that the church has taken advantage of him in his venerable manner. He quoted section 269.1(1) Torture CC. Writer understanding of this section was it was used during wartime. Richardson stated it was not. Writer advised he would need to look at the section and refer to crown if required. Richardson stated they wanted him to through his daughter out after she had just been "violated" and he was at his lowest. From his reading this is torture as defined by the criminal code he believes that this happened to him.

Richardson says he holds the members of the church at a higher standerd.

He defines the elders of the church as "officers" and stated that he was an officer and held 2 positions in the church. He was a member of the Battleford church for 3 or 4 years.

Richardson was asked to step down and in his mind they were in breach of civil law (non for profit act...) given his state of mind.

Richardson then stated that he contacted them from his business and offered his services which they declined. He believes that is also a breach. He was removed from his position within the church against his will and was served a no trespass order which he believes that this is illegal.

It was at this point Richardson pulled a paper a separation agreement served on him by his wife's lawyer. On the agreement a car was listed and he did not agree that this was his property and as such the paper was perjury he also referred to the agreement as an affidavit. He continued saying they "extorted" "took it forcefully" the vehicle from him.

Richardson continued regarding the family disagreement and said they had made false clams on him and had called the RCMP on him. He further said they had made racial comments towards him. Richardson feels that he had been discriminated against.

Richardson flipped through the papers stating "this is relevant, this is relevant," several times with out providing any context to why or how.

Richardson then brings up the Sask health association

He begins talking about a graph showing the air exchanges per hour. He provided a table that he found on-line saying that they are criminally neglecting public safety as per the graph.

He also says that agents of the SHA were part of the torture that he received at the hands of the church.

This is a brief summary of of the 1:27 interview. and
Richardson has posted the video on You Tube.

I have reviewed 269.1(1) it reads as follows:

Torture

- **269.1** (1) Every official, or every person acting at the instigation of or with the consent or acquiescence of an official, who inflicts torture on any other person is guilty of an indictable offence and liable to imprisonment for a term not exceeding fourteen years.

- Marginal note:Definitions

  (2) For the purposes of this section,

  official

  *official*means

  - (a) a peace officer,
  - (b) a public officer,
  - (c) a member of the Canadian Forces, or
  - (d) any person who may exercise powers, pursuant to a law in force in a foreign state, that would, in Canada, be exercised by a person referred to in paragraph (a), (b), or (c),

  whether the person exercises powers in Canada or outside Canada;(fonctionnaire)

  torture

  *torture*means any act or omission by which severe pain or suffering, whether physical or mental, is intentionally inflicted on a person

  - (a) for a purpose including
    - (i) obtaining from the person or from a third person information or a statement,
    - (ii) punishing the person for an act that the person or a third person has committed or is suspected of having committed, and
    - (iii) intimidating or coercing the person or a third person, or

- (b) for any reason based on discrimination of any kind,

but does not include any act or omission arising only from, inherent in or incidental to lawful sanctions.(torture)

- Marginal note:No defence

(3) It is no defence to a charge under this section that the accused was ordered by a superior or a public authority to perform the act or omission that forms the subject-matter of the charge or that the act or omission is alleged to have been justified by exceptional circumstances, including a state of war, a threat of war, internal political instability or any other public emergency.

- Marginal note:Evidence

(4) In any proceedings over which Parliament has jurisdiction, any statement obtained as a result of the commission of an offence under this section is inadmissible in evidence, except as evidence that the statement was so obtained.

- R.S., 1985, c. 10 (3rd Supp.), s. 2

As such Richard is saying the church members are "Officers" to have this section apply. However what he had described is a person giving him bad advice and the fact that he was suffering from depression and being at his lowest point

Further it states that the person needs to be :

- (a) a peace officer,
- (b) a public officer,
- (c) a member of the Canadian Forces, or
- (d) any person who may exercise powers, pursuant to a law in force in a foreign state, that would, in Canada, be exercised by a person referred to in paragraph (a), (b), or (c),

whether the person exercises powers in Canada or outside Canada;(fonctionnaire)

As such the persons he is claiming committed this do not fit this definition nor from what he has provided to writer dose it show any mens rea.

As for the SHA allegation he is claiming 219(1) CC criminal negligence:

Criminal negligence

- **219** (1) Every one is criminally negligent who
  - (a) in doing anything, or
  - (b) in omitting to do anything that it is his duty to do,

  shows wanton or reckless disregard for the lives or safety of other persons.

- Definition of *duty*

(2) For the purposes of this section, *duty* means a duty imposed by law.

For this section to be made out we would need to show a wanton or reckless disregard for the lives or safety of other persons. Richardson provided 2 tables from the internet from 1994. He told me they did not want to give him any of the information as this complaint came in on the weekend I can not call them to have any documents sent over. Further it was not clear as to what Richardson was talking

about and I had asked him to wright out a description in layman's terms to make out what his accusation actually is.

Richardson is to provide emails in regards to a domestic assault however there is not information provided to continue with this at this time.

Cst. B Roy A/Cpl

2020-07-05 15:08 Hrs.

Richardson attended to the detachment again, With the same 2 people recording the interaction.

Richardson said he had started a new complaint with the UN and provided approximately 200 pages to writer. He further stated that Cst. Sekela is the only member that can deal with his file and stated that writer is in breaking international law as writer told him that Cst. Sekela was not handling this file and writer would not provide Cst. Sekelas email address to him.

Writer attempted to request the emails that he spoke about on his previous visit. Richardson was visibly mad and told writer that is not why he is at the detachment this time and it was his complaint and he will handle it how he wants to.

Richardson continued saying that writer was breaking gods laws he stated this several times. Writer asked him if he needed anything else as writer has to go back to work. Richardson again said that writer was in breach of international laws and exited the detachment.

Cst. B Roy A/Cpl

2020-07-06 18:00 Hrs.

Richardson attended to the detachment again, Same 2 people recording. He provided several biblical books and folders containing papers. He stated that his "torture" was based on the bible. Writer took the items from Richardson and added them to the file. It should be noted that in writers last dealings with Richardson I again asked for the emails regarding the "assault". Again today he did not provide them. He quoted a bible verse and told writer "you were found wanting".

It is clear that Richardson dose not wish to continue with the assault investigation as he has not provided the information requested by writer and further told writer not to call him or have anybody call him. Further I have reviewed all the documents that Richardson had provided. The majority of the documents are Richardson's emails that he has sent to people and a very few reply's from them. He has also provided several religious books and bible scripts and magizne pages. The SHA has given Richardson a very clear reply to his complaint which Richardson himself provided as evidence.

At this point the torture complaint holds nothing of merit and dose not fit,

Today's dealings are also posted to You Tube.

Cst. B Roy A/Cpl

2020-07-14

Richardson clearly told writer he did not want writer to call him back as such he will not be updated.

CH

Cst. B Roy A/Cpl

Ext. doc. occ report [PDF, 4.11 MB]:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Dale Richardson att

Task: TK20221800535 [Other - Closed] Due: 2022/06/25 14:11 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 2020898119 Assistance to General Public @2020/07/03 15:43 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9

Author:
Entered by: #000165620 RADDYSH, LAURIE
Person:
Address:
Vehicle:
Officer:
Remarks:

Report time: 2022/06/20 14:12 CST
Entered time: 2022/06/20 14:11 CST

Ext. doc. occ report [PDF, 1.98 MB]:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Dale Richardson att

Task: TK20221800535 [Other - Closed] Due: 2022/06/25 14:11 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 2020898119 Assistance to General Public @2020/07/03 15:43 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9

Author:
Entered by: #000165620 RADDYSH, LAURIE
Person:
Address:
Vehicle:
Officer:
Remarks:

Report time: 2022/06/20 14:13 CST
Entered time: 2022/06/20 14:13 CST

Ext. doc. occ report [PDF, 8.50 MB]:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Dale Richardson att

Task: TK20221800535 [Other - Closed] Due: 2022/06/25 14:11 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 2020898119 Assistance to General Public @2020/07/03 15:43 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9

Author:
Entered by: #000165620 RADDYSH, LAURIE
Person:
Address:
Vehicle:
Officer:
Remarks:
Report time: 2022/06/20 14:14 CST
Entered time: 2022/06/20 14:13 CST

Ext. doc. occ report [PDF, 1.98 MB]:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Dale Richardson att

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Author:
Entered by: #000165620 RADDYSH, LAURIE
Person:
Address:
Vehicle:
Officer:
Remarks:
Report time: 2022/06/20 14:15 CST
Entered time: 2022/06/20 14:14 CST

Ext. doc. occ report [PDF, 155.55 KB]:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Dale Richardson att

Task: TK20221800535 [Other - Closed] Due: 2022/06/25 14:11 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 2020898119 Assistance to General Public @2020/07/03 15:43 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9

Author:
Entered by: #000165620 RADDYSH, LAURIE
Person:
Address:
Vehicle:
Officer:
Remarks:
Report time: 2022/06/20 15:42 CST
Entered time: 2022/06/20 14:17 CST

Ext. doc. occ report [PDF, 916.25 KB]:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Dale Richardson att

Task: TK20221800535 [Other - Closed] Due: 2022/06/25 14:11 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP

Request 2020898119 Assistance to General Public @2020/07/03 15:43 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9

Author:
Entered by: #000165620 RADDYSH, LAURIE
Person:
Address:
Vehicle:
Officer:
Remarks:

Report time: 2022/06/20 15:43 CST
Entered time: 2022/06/20 15:42 CST

Ext. doc. occ report [PDF, 1.28 MB]:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Dale Richardson att

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Author:
Entered by: #000165620 RADDYSH, LAURIE
Person:
Address:
Vehicle:
Officer:
Remarks:

Report time: 2022/06/20 15:44 CST
Entered time: 2022/06/20 15:43 CST

Ext. doc. occ report [PDF, 444.38 KB]:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Dale Richardson att

Task: TK20221800535 [Other - Closed] Due: 2022/06/25 14:11 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 2020898119 Assistance to General Public @2020/07/03 15:43 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9

Author:
Entered by: #000165620 RADDYSH, LAURIE
Person:
Address:
Vehicle:
Officer:
Remarks:

Report time: 2022/06/20 15:45 CST
Entered time: 2022/06/20 15:45 CST

Ext. doc. occ report [PDF, 120.54 KB]:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Dale Richardson att

Task: TK20221800535 [Other - Closed] Due: 2022/06/25 14:11 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 2020898119 Assistance to General Public @2020/07/03 15:43 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9

Author:
Entered by: #000165620 RADDYSH, LAURIE
Person:
Address:
Vehicle:
Officer:
Remarks:

Report time: 2022/06/20 15:47 CST
Entered time: 2022/06/20 15:46 CST

Ext. doc. occ report [PDF, 161.17 KB]:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Dale Richardson att

Task: TK20221800535 [Other - Closed] Due: 2022/06/25 14:11 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 2020898119 Assistance to General Public @2020/07/03 15:43 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9

Author:
Entered by: #000165620 RADDYSH, LAURIE
Person:
Address:
Vehicle:
Officer:
Remarks:

Report time: 2022/06/20 15:48 CST
Entered time: 2022/06/20 15:47 CST

Ext. doc. occ report [PDF, 23.84 KB]:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Dale Richardson att

Task: TK20221800535 [Other - Closed] Due: 2022/06/25 14:11 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 2020898119 Assistance to General Public @2020/07/03 15:43 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9

Author:
Entered by: #000165620 RADDYSH, LAURIE
Person:
Address:
Vehicle:
Officer:
Remarks:

Report time: 2022/06/20 15:50 CST
Entered time: 2022/06/20 15:50 CST

Ext. doc. occ report [PDF, 254.56 KB]:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Dale Richardson att

Task: TK20221800535 [Other - Closed] Due: 2022/06/25 14:11 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 2020898119 Assistance to General Public @2020/07/03 15:43 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9

Author:

Report time: 2022/06/20 15:50 CST

Entered by: #000165620 RADDYSH, LAURIE *Entered time:* 2022/06/20 15:50 CST
Person:
Address:
Vehicle:
Officer:
Remarks:

Ext. doc. occ report [PDF, 688.74 KB]:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Dale Richardson att

Task: TK20221800535 [Other - Closed] Due: 2022/06/25 14:11 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 2020898119 Assistance to General Public @2020/07/03 15:43 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9

Author: *Report time:* 2022/06/20 15:51 CST
Entered by: #000165620 RADDYSH, LAURIE *Entered time:* 2022/06/20 15:51 CST
Person:
Address:
Vehicle:
Officer:
Remarks:

Ext. doc. occ report [PDF, 256.87 KB]:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Dale Richardson att

Task: TK20221800535 [Other - Closed] Due: 2022/06/25 14:11 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 2020898119 Assistance to General Public @2020/07/03 15:43 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9

Author: *Report time:* 2022/06/20 15:52 CST
Entered by: #000165620 RADDYSH, LAURIE *Entered time:* 2022/06/20 15:51 CST
Person:
Address:
Vehicle:
Officer:
Remarks:

Ext. doc. occ report [PDF, 156.80 KB]:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Dale Richardson att

Task: TK20221800535 [Other - Closed] Due: 2022/06/25 14:11 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 2020898119 Assistance to General Public @2020/07/03 15:43 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9

Author: *Report time:* 2022/06/20 15:53 CST
Entered by: #000165620 RADDYSH, LAURIE *Entered time:* 2022/06/20 15:52 CST
Person:

Address:
Vehicle:
Officer:
Remarks:

Ext. doc. occ report [PDF, 28.47 KB]:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Dale Richardson att

Task: TK20221800535 [Other - Closed] Due: 2022/06/25 14:11 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 2020898119 Assistance to General Public @2020/07/03 15:43 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9

Author:
Entered by: #000165620 RADDYSH, LAURIE
Report time: 2022/06/20 15:54 CST
Entered time: 2022/06/20 15:54 CST
Person:
Address:
Vehicle:
Officer:
Remarks:

Ext. doc. occ report [PDF, 841.26 KB]:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Dale Richardson att

Task: TK20221800535 [Other - Closed] Due: 2022/06/25 14:11 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 2020898119 Assistance to General Public @2020/07/03 15:43 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9

Author:
Entered by: #000165620 RADDYSH, LAURIE
Report time: 2022/06/20 15:57 CST
Entered time: 2022/06/20 15:54 CST
Person:
Address:
Vehicle:
Officer:
Remarks:

Ext. doc. occ report [PDF, 343.64 KB]:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Dale Richardson att

Task: TK20221800535 [Other - Closed] Due: 2022/06/25 14:11 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 2020898119 Assistance to General Public @2020/07/03 15:43 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9

Author:
Entered by: #000165620 RADDYSH, LAURIE
Report time: 2022/06/20 15:57 CST
Entered time: 2022/06/20 15:57 CST
Person:
Address:
Vehicle:

Officer:
Remarks:

Ext. doc. occ report [PDF, 989.54 KB]:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Dale Richardson att

Task: TK20221800535 [Other - Closed] Due: 2022/06/25 14:11 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 2020898119 Assistance to General Public @2020/07/03 15:43 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9

Author:
Entered by: #000165620 RADDYSH, LAURIE
Report time: 2022/06/20 15:58 CST
Entered time: 2022/06/20 15:58 CST
Person:
Address:
Vehicle:
Officer:
Remarks:

Ext. doc. occ report [PDF, 3.20 MB]:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Dale Richardson att

Task: TK20221800535 [Other - Closed] Due: 2022/06/25 14:11 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 2020898119 Assistance to General Public @2020/07/03 15:43 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9

Author:
Entered by: #000165620 RADDYSH, LAURIE
Report time: 2022/06/20 15:59 CST
Entered time: 2022/06/20 15:58 CST
Person:
Address:
Vehicle:
Officer:
Remarks:

Ext. doc. occ report [PDF, 1.13 MB]:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Dale Richardson att

Task: TK20221800535 [Other - Closed] Due: 2022/06/25 14:11 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 2020898119 Assistance to General Public @2020/07/03 15:43 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9

Author:
Entered by: #000165620 RADDYSH, LAURIE
Report time: 2022/06/20 16:00 CST
Entered time: 2022/06/20 15:59 CST
Person:
Address:
Vehicle:
Officer:
Remarks:

Ext. doc. occ report [PDF, 618.32 KB]:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Dale Richardson att

Task: TK20221800535 [Other - Closed] Due: 2022/06/25 14:11 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 2020898119 Assistance to General Public @2020/07/03 15:43 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9

Author:
Entered by: #000165620 RADDYSH, LAURIE
Person:
Address:
Vehicle:
Officer:
Remarks:

Report time: 2022/06/20 16:01 CST
Entered time: 2022/06/20 16:00 CST

Ext. doc. occ report [PDF, 421.86 KB]:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Dale Richardson att

Task: TK20221800535 [Other - Closed] Due: 2022/06/25 14:11 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 2020898119 Assistance to General Public @2020/07/03 15:43 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9

Author:
Entered by: #000165620 RADDYSH, LAURIE
Person:
Address:
Vehicle:
Officer:
Remarks:

Report time: 2022/06/20 16:04 CST
Entered time: 2022/06/20 16:01 CST

Ext. doc. occ report [PDF, 238.66 KB]:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Dale Richardson att

Task: TK20221800535 [Other - Closed] Due: 2022/06/25 14:11 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 2020898119 Assistance to General Public @2020/07/03 15:43 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9

Author:
Entered by: #000165620 RADDYSH, LAURIE
Person:
Address:
Vehicle:
Officer:
Remarks:

Report time: 2022/06/20 16:05 CST
Entered time: 2022/06/20 16:04 CST

Ext. doc. occ report [PDF, 145.13 KB]:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Dale Richardson att

Task: TK20221800535 [Other - Closed] Due: 2022/06/25 14:11 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 2020898119 Assistance to General Public @2020/07/03 15:43 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9

Author:
Entered by: #000165620 RADDYSH, LAURIE
Person:
Address:
Vehicle:
Officer:
Remarks:
Report time: 2022/06/20 16:06 CST
Entered time: 2022/06/20 16:05 CST

Ext. doc. occ report [PDF, 519.27 KB]:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Dale Richardson att

Task: TK20221800535 [Other - Closed] Due: 2022/06/25 14:11 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 2020898119 Assistance to General Public @2020/07/03 15:43 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9

Author:
Entered by: #000165620 RADDYSH, LAURIE
Person:
Address:
Vehicle:
Officer:
Remarks:
Report time: 2022/06/20 16:08 CST
Entered time: 2022/06/20 16:06 CST

Ext. doc. occ report [PDF, 462.74 KB]:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Dale Richardson att

Task: TK20221800535 [Other - Closed] Due: 2022/06/25 14:11 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 2020898119 Assistance to General Public @2020/07/03 15:43 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9

Author:
Entered by: #000165620 RADDYSH, LAURIE
Person:
Address:
Vehicle:
Officer:
Remarks:
Report time: 2022/06/20 16:08 CST
Entered time: 2022/06/20 16:08 CST

Ext. doc. occ report [PDF, 796.83 KB]:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT)

(Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C))
(Dale Richardson att

Task: TK20221800535 [Other - Closed] Due: 2022/06/25 14:11 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 2020898119 Assistance to General Public @2020/07/03 15:43 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9

Author:
Entered by: #000165620 RADDYSH, LAURIE
Person:
Address:
Vehicle:
Officer:
Remarks:
Report time: 2022/06/20 16:09 CST
Entered time: 2022/06/20 16:09 CST

Ext. doc. occ report [PDF, 1.04 MB]:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Dale Richardson att

Task: TK20221800535 [Other - Closed] Due: 2022/06/25 14:11 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 2020898119 Assistance to General Public @2020/07/03 15:43 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9

Author:
Entered by: #000165620 RADDYSH, LAURIE
Person:
Address:
Vehicle:
Officer:
Remarks:
Report time: 2022/06/20 16:10 CST
Entered time: 2022/06/20 16:09 CST

Ext. doc. occ report [PDF, 1.54 MB]:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Dale Richardson att

Task: TK20221800535 [Other - Closed] Due: 2022/06/25 14:11 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 2020898119 Assistance to General Public @2020/07/03 15:43 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9

Author:
Entered by: #000165620 RADDYSH, LAURIE
Person:
Address:
Vehicle:
Officer:
Remarks:
Report time: 2022/06/20 16:10 CST
Entered time: 2022/06/20 16:10 CST

Ext. doc. occ report [PDF, 2.62 MB]:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Dale Richardson att

Task: TK20221800535 [Other - Closed] Due: 2022/06/25 14:11 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 2020898119 Assistance to General Public @2020/07/03 15:43 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9

Author:
Entered by: #000165620 RADDYSH, LAURIE
Person:
Address:
Vehicle:
Officer:
Remarks:
Report time: 2022/06/20 16:12 CST
Entered time: 2022/06/20 16:11 CST

Ext. doc. occ report [PDF, 893.45 KB]:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Dale Richardson att

Task: TK20221800535 [Other - Closed] Due: 2022/06/25 14:11 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 2020898119 Assistance to General Public @2020/07/03 15:43 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9

Author:
Entered by: #000165620 RADDYSH, LAURIE
Person:
Address:
Vehicle:
Officer:
Remarks:
Report time: 2022/06/20 16:13 CST
Entered time: 2022/06/20 16:12 CST

Ext. doc. occ report [PDF, 449.28 KB]:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Dale Richardson att

Task: TK20221800535 [Other - Closed] Due: 2022/06/25 14:11 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 2020898119 Assistance to General Public @2020/07/03 15:43 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9

Author:
Entered by: #000165620 RADDYSH, LAURIE
Person:
Address:
Vehicle:
Officer:
Remarks:
Report time: 2022/06/20 16:14 CST
Entered time: 2022/06/20 16:13 CST

Ext. doc. occ report [PDF, 513.57 KB]:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Dale Richardson att

Task: TK20221800535 [Other - Closed] Due: 2022/06/25 14:11 CST #000165620 RADDYSH,

LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 2020898119 Assistance to General Public @2020/07/03 15:43 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9

Author:
Entered by: #000165620 RADDYSH, LAURIE
Person:
Address:
Vehicle:
Officer:
Remarks:

Report time: 2022/06/20 16:14 CST
Entered time: 2022/06/20 16:14 CST

Ext. doc. occ report [PDF, 700.08 KB]:

Occurrence: 2020898119 Assistance to General Public @2020/07/03 15:43 CST (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Dale Richardson att

Task: TK20221800535 [Other - Closed] Due: 2022/06/25 14:11 CST #000165620 RADDYSH, LAURIE ->F DIV BATTLEFORDS RURAL DET-INFORMATION MANAGERS ATIP Request 2020898119 Assistance to General Public @2020/07/03 15:43 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9

Author:
Entered by: #000165620 RADDYSH, LAURIE
Person:
Address:
Vehicle:
Officer:
Remarks:

Report time: 2022/06/20 16:16 CST
Entered time: 2022/06/20 16:15 CST

Occurrence details

RCMP-GRC , HQ

Printed: 2022/06/23 14:49 by 000312461

Occurrence: **2020898911**

Occurrence details:

Report no.:	2020898911
Dispatch type:	Police assistance
Occurrence type:	Assistance to General Public
Occurrence time:	2020/07/03 17:38 -
Reported time:	2020/07/03 17:38
Place of offence:	1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)
Source:	Phone
Priority:	Information
Clearance status:	Complete - solved (non-criminal)
Concluded:	Yes
Concluded date:	2020/07/16
Summary:	File created for Criminal neglect. Richardson wanted one file for him and one for his company... Cst. B Roy/// GR is updated File is CH Cst. B Roy A/Cpl
Remarks:	

Associated occurrences:

- Same person / 2020898119 [R] / Assistance to General Public / 2020/07/03 15:43 CST / 20200703 21:43:55:213 UTC
- Same event; Similar MO / 2020922562 / Information File / 2020/07/07 16:03 CST / 20200707 22:03:16:547 UTC

Involved persons:

- RICHARDSON, DALE JAMES SODAT / Complainant / DOB: 1974/07/16 (47) Gender: Male (1292 95 STREET, NORTH BATTLEFORD, SK Canada (Division: F, District: Central, Detachment: Battleford Municipal, Zone: BFD, Atom: 2) (Voice) (306) 441-7010) FPS: 755786C DL:AB:150015170
  (Voice) (306) 441-4626
  (Cellular phone) (306) 392-0185
  (Cellular phone) (403) 472-2109
  (Voice) (403) 455-0406
  (Voice) (403) 207-1989

Involved addresses:

- 1052 101 STREET / Occurrence address / NORTH BATTLEFORD, Sask, Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)

Involved comm addresses:

Involved vehicles:

Involved officers:

- Supervising officer / #000046384 / PROS / Officer / F DIV BATTLEFORDS MUN DET / 2020/07/04 / 20200704 --:--:--:---

- Dispatched officer / #000185221 / PROS / Officer / J DIV NORTHEAST RSC FIVE BLACKVILLE TEAM 2 / 2020/07/03 / 20200703 --:--:--:---
- Primary unit / F0584 / RCMP / Assignable / 2020/07/03 / 20200703 --:--:--:---
- Dispatched officer; Lead investigator; Supervising officer / #000162614 / PROS / Officer / F DIV REGINA SPECIAL I-PROV / 2020/07/03 / 20200703 --:--:--:---

Involved property:

Modus operandi:

Reports:

General report:

Occurrence: 2020898911 Assistance to General Public @2020/07/03 17:38 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (File created for Crimin

Task: TK20201903838 [Init rpt - Closed] Due: 2020/07/30 19:39 #009999997 CADINTERFACE, CAD ->#000162614 ROY, BURTON CH***re200701839 2020898911 Assistance to General Public @2020/07/03 17:38 EDT (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORD

Author: #000162614 ROY, BURTON *Report time:* 2020/07/04 13:20 CST
Entered by: #000162614 ROY, BURTON *Entered time:* 2020/07/04 13:20 CST
Remarks:
Narrative:

2020-07-03 15:30 Hrs. (Aprox)

Writer was supervising on dayshift and was advised Dale Richardson was at the front counter. He was wanting to report domestic abuse, extorsion, harassment ect. Writer was further advised that he had two people with him all including Richardson had cell phones out and were video recording people as they passed the front counter.

Richardson had attended to the detachment on the 2nd and had refused to enter the detachment to provide a statement. Richardson had also posted all the videos that he had taken to YouTube.

Writer attended to the front counter and spoke with Richardson. He began to try to point the conversation to the documents he had in his hands and began trying to steer the conversation and have a quazy interview in the front counter prior to any information gathering occurring. Writer stopped him and told him writer was given some information as to why he was here however for writer to start an investigation writer would need to take a statement from him. Writer told Richardson that he could attend to the interview room and provide an audio video statement. Richardson instantly interrupted writer and said that the only way he was going to come into the detachment was with the other 2 people in the lobby. Cst. Roy told him that was not going to happen. Richardson said he was not going to go anywhere with writer.

Writer then advised him that he could write out his statement and provide it. Richardson was provided with a clipboard and pad of paper and pen. Richardson handed a pile of papers to writer and said it was evidence to support his charges. Writer asked him if those were for writer. Richardson stated that writer was to photocopy them and return them. Writer had the papers copied and returned Richardson's papers to him. Writer told Richardson that an interview room would be set up for him to provide a statement if he did not wish to write out the statement (Writer set up #124 and turned on the recorder). Richardson protested saying that he had ADHD and that he was not going to come into the detachment and that writer was not willing to take his complaint. Writer again told him to come in to the detachment and that writer would provide him a copy of the statement again Richardson refused saying that we could do the interview in the front lobby. Writer told him that the lobby was public and that it was not going to happen there. Richardson then said he wanted to do it in front of the

detachment. Writer explained that the front of the detachment was as public as the lobby. Richardson agreed to attend to the rural parking lot.

16:12 Hrs
Writer took a statement from Richardson he provided the following information:

Richardson began saying that he had a number of complaints that he wanted to make starting with a mediation that occurred at the 7th day adventist church in February.

When asked directly what the allegations were Richardson began to shuffle papers and said were going to begin here. (not answering the question he begins a story)

Richardson says that his wife had an incident at the 7th day adventist church on the 15th of February which the RCMP was involved. His daughter made a complaint about that yesterday regarding sexual assault.

Richardson stated wife hates his oldest daughter and there was an argument between the two of them over access of there youngest child. There was a situation at the church where she was yelling at him and church members intervene.

Richardson left the residence and went to Calgary to stay with family. When he returned his wife had changed the locks.

Richardson aledges that his wife had assaulted him "several" times and stated that he has emails that can prove it.

Richardson continued talking about civil matters between the church and him. He further spoke about family law matters between his wife and him.

16:28 Hrs. (changed battery in recorder)

Richardson stated that he is in duress and that the church has taken advantage of him in his venerable manner. He quoted section 269.1(1) Torture CC. Writer understanding of this section was it was used during wartime. Richardson stated it was not. Writer advised he would need to look at the section and refer to crown if required. Richardson stated they wanted him to through his daughter out after she had just been "violated" and he was at his lowest. From his reading this is torture as defined by the criminal code he believes that this happened to him.

Richardson says he holds the members of the church at a higher standerd.

He defines the elders of the church as "officers" and stated that he was an officer and held 2 positions in the church. He was a member of the Battleford church for 3 or 4 years.

Richardson was asked to step down and in his mind they were in breach of civil law (non for profit act...) given his state of mind.

Richardson then stated that he contacted them from his business and offered his services which they declined. He believes that is also a breach. He was removed from his position within the church against his will and was served a no trespass order which he believes that this is illegal.

It was at this point Richardson pulled a paper a separation agreement served on him by his wife's lawyer. On the agreement a car was listed and he did not agree that this was his property and as such the paper was perjury he also referred to the agreement as an affidavit. He continued saying they "extorted" "took it forcefully" the vehicle from him.

Richardson continued regarding the family disagreement and said they had made false clams on him and had called the RCMP on him. He further said they had made racial comments towards him. Richardson feels that he had been discriminated against.

Richardson flipped through the papers stating "this is relevant, this is relevant," several times with out providing any context to why or how.

Richardson then brings up the Sask health association

He begins talking about a graph showing the air exchanges per hour. He provided a table that he found on-line saying that they are criminally neglecting public safety as per the graph.

He also says that agents of the SHA were part of the torture that he recived at the hands of the church.

This is a brief summary of of the 1:27 interview. and
Richardson has posted the video on You Tube.

I have reviewed 269.1(1) it reads as follows:

Torture

- **269.1** (1) Every official, or every person acting at the instigation of or with the consent or acquiescence of an official, who inflicts torture on any other person is guilty of an indictable offence and liable to imprisonment for a term not exceeding fourteen years.

- Marginal note:Definitions

  (2) For the purposes of this section,

  official

  *official*means

  - (a) a peace officer,
  - (b) a public officer,
  - (c) a member of the Canadian Forces, or
  - (d) any person who may exercise powers, pursuant to a law in force in a foreign state, that would, in Canada, be exercised by a person referred to in paragraph (a), (b), or (c),

  whether the person exercises powers in Canada or outside Canada;(fonctionnaire)

  torture

  *torture*means any act or omission by which severe pain or suffering, whether physical or mental, is intentionally inflicted on a person

  - (a) for a purpose including
    - (i) obtaining from the person or from a third person information or a statement,
    - (ii) punishing the person for an act that the person or a third person has committed or is suspected of having committed, and
    - (iii) intimidating or coercing the person or a third person, or
  - (b) for any reason based on discrimination of any kind,

  but does not include any act or omission arising only from, inherent in or incidental to lawful sanctions.(torture)

- Marginal note:No defence

(3) It is no defence to a charge under this section that the accused was ordered by a superior or a public authority to perform the act or omission that forms the subject-matter of the charge or that the act or omission is alleged to have been justified by exceptional circumstances, including a state of war, a threat of war, internal political instability or any other public emergency.

- Marginal note:Evidence

(4) In any proceedings over which Parliament has jurisdiction, any statement obtained as a result of the commission of an offence under this section is inadmissible in evidence, except as evidence that the statement was so obtained.

- R.S., 1985, c. 10 (3rd Supp.), s. 2

As such Richard is saying the church members are "Officers" to have this section apply. However what he had discribed is a person giving him bad advice and the fact that he was suffering from depression and being at his lowest point

Further it states that the person needs to be :

- (a) a peace officer,
- (b) a public officer,
- (c) a member of the Canadian Forces, or
- (d) any person who may exercise powers, pursuant to a law in force in a foreign state, that would, in Canada, be exercised by a person referred to in paragraph (a), (b), or (c),

whether the person exercises powers in Canada or outside Canada;(fonctionnaire)

As such the persons he is claiming committed this do not fit this definition nor from what he has provided to writer dose it show any mens rea.

As for the SHA allagation he is claiming 219(1) CC criminal negligence:

Criminal negligence

- **219** (1) Every one is criminally negligent who
  - (a) in doing anything, or
  - (b) in omitting to do anything that it is his duty to do,

  shows wanton or reckless disregard for the lives or safety of other persons.
- Definition of *duty*

(2) For the purposes of this section, *duty* means a duty imposed by law.

For this section to be maid out we would need to show a wanton or recless disregard for the lives or safety of other persons. Richardson provided 2 tables from the internet from 1994. He told me they did not want to give him any of the information as this complaint came in on the weekend I can not call them to have any documents sent over. Further it was not clear as to what Richardson was talking about and I had asked him to wright out a discription in laymans terms to make out what his accusation actually is.

Richardson is to provide emails in regards to a domestic assault however there is not information provided

Cst. B Roy A/Cpl

2020-07-06 18:00 Hrs.

Richardson attended to the detachment again, Same 2 people recording. He provided several biblical books and folders containing papers. He stated that his "torture" was based on the bible. Writer took the items from Richardson and added them to the file. It should be noted that in writers last dealings with Richardson I again asked for the emails regarding the "assault". Again today he did not provide them. He quoted a bible verse and told writer "you were found wanting".

Further I have reviewed all the documents that Richardson had provided. The maiority of the documents are Richardson's emails that he has sent to people
He has also provided several religious books and bible scripts and magizne pages. The SHA has given Richardson a very clear reply to his complaint which Richardson himself provided as evidence.

Today's dealings are also posted to You Tube.

Cst. B Roy A/Cpl

2020-07-14

Richardson clearly told writer he did not want writer to call him back as such he will not be updated.

CH

Cst. B Roy A/Cpl

Ext. doc. occ report [PDF, 1.10 MB]:

Occurrence: 2020898911 Assistance to General Public @2020/07/03 17:38 (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (File created for Crimin

Task:
Author: *Report time:* 2022/06/10 14:13 CST
Entered by: #000165620 RADDYSH, LAURIE *Entered time:* 2022/06/10 14:12 CST
Person:
Address:
Vehicle:
Officer:
Remarks:

Occurrence details

RCMP-GRC , HQ

Printed: 2022/06/23 14:51 by 000312461

Occurrence: **2020922562**

Occurrence details:

Report no.:	2020922562
Dispatch type:	
Occurrence type:	Information File
Occurrence time:	2020/07/07 16:03 CST -
Reported time:	2020/07/07 16:03 CST
Place of offence:	1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)
Source:	
Priority:	Routine
Clearance status:	Complete - solved (non-criminal)
Concluded:	Yes
Concluded date:	2020/07/07
Summary:	COM, Dale RICHARDSON, came to detachement to report another tourcher. Cst. HOUK talked with COM.//ah// COM only stated that he wanted another new tourcher file generated and a file number provided. He will not deal with any other officer besides Cst. Sekela. RICAHRD was advised that there was already a file generated and Cst ROY is the investigator. RICHARDSON wanted a new one. This file generated as an information file and this file number was provided to RICHARDSON.
Remarks:	

Associated occurrences:

- Same event; Similar MO / 2020898911 [R] / Assistance to General Public / 2020/07/03 17:38 / 20200703 21:38:32:000 UTC
- Same person; Similar MO / 2020898119 [R] / Assistance to General Public / 2020/07/03 15:43 CST / 20200703 21:43:55:213 UTC

Involved persons:

- RICHARDSON, DALE JAMES SODAT / Complainant; Emotionally Disturbed Person (EDP) / DOB: 1974/07/16 (47) Gender: Male (1292 95 STREET, NORTH BATTLEFORD, SK Canada (Division: F, District: Central, Detachment: Battleford Municipal, Zone: BFD, Atom: 2) (Voice) (306) 441-7010) FPS: 755786C DL:AB:150015170
  (Voice) (306) 441-4626
  (Cellular phone) (306) 392-0185
  (Cellular phone) (403) 472-2109
  (Voice) (403) 455-0406
  (Voice) (403) 207-1989

Involved addresses:

- 1052 101 STREET / Dispatch address; Occurrence address / NORTH BATTLEFORD, Sask, Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)

Involved comm addresses:

Involved vehicles:

Involved officers:

- Primary unit / F0584 / RCMP / Assignable / 2020/07/07 / 20200707 --:--:--:---
- Other assisting employee / #000306873 / PROS / Police P/S / F DIV CRIME REDUCTION TEAM- NORTH BATTLEFORD / 2020/07/07 / 20200707 --:--:--:---
- Lead investigator; Supervising officer / #000044301 / PROS / Officer / F DIV INACTIVE USERS ACCOUNT / 2020/07/07 / 20200707 --:--:--:---

Involved property:

Modus operandi:

Reports:

Warrant For Arrest — Form 7 — Formule 7
Mandat d'arrestation

(Sections 475, 493, 597, 800, 803)

Police File Number / Numéro du dossier de police	Information Number / Numéro de dénonciation
2020-1016013	90425782

To the Peace Officers in the Province of Saskatchewan.
Aux agents de la paix de la province de la Saskatchewan.

This warrant is issued for the arrest of
Le présent mandat est délivré pour l'arrestation de DALE RICHARDSON

of
de NORTH BATTLEFORD, SASKATCHEWAN born on / né le 1974-07-~~17~~ referred to in this warrant as the accused. / ci-après appelé le prévenu.

Because the accused has been charged that *(set out briefly the offence in respect of which the accused is charged)*;
Attendu que le prévenu a été inculpé d'avoir *(indiquer brièvement l'infraction dont le prévenue est inculpé)*:

RESIST ARREST - S. 129(A) CC

AND BECAUSE: (check all that are applicable)

- ☒ a. there are reasonable grounds to believe that it is necessary in the public interest to issue this warrant for the arrest of the accused [507 (4); 512(1)];
- ☐ b. the accused failed to attend court in accordance with the summons service on him [512(2)];
- ☐ c. (an apprearance notice or undertaking) was confirmed and the accused failed to attend court in accordance with it [512(2)];
- ☐ d. it appears that a summons cannot be served because the accused is evading service [512(2)];
- ☐ e. the accused was ordered to be present at the hearing of an application for a review of an order made by a justice and did not attend the hearing [520(5); 521(5)];
- ☐ f. there are reasonable grounds to believe that the accused has contravened or is about to contravene the (summons or appearance notice or undertaking or release order) on which the accused was released [512.3];
- ☐ g. there are reasonable grounds to believe that the accused has committed an indictable offence since their release from custody on (summons or appearance notice or undertaking or release order) [512.3];
- ☐ h. the accused was required by (an appearance notice or undertaking or summons) to attend at a time and place stated in it for the purposes of the *Identification of Criminals Act* and did not appear at that time and place [512.1; 512.2];
- ☐ i. an indictment as been found against the accused and the accused has not appeared or remained in attendance before the court for their tribunal (597);
- ☐ j. (if none of the above applies, reproduce the provisions of the statute that authorizes this warrant).

ET ATTENDU (cocher uniquement ce qui s'applique) :

- ☒ a. qu'il y des motifs raisonnables et probables de croire qu'il est nécessaire dans l'interêt du public de délivrer le présent mandat pour l'arrestation du prévenu [507 (4); 512(1)];
- ☐ b. que le prévenu a omis d'être présent au tribunal an conformité de la sommation, qui lui a été signifiée [512(2)];
- ☐ c. qu'un(e) (citation à comparaître ou promesse a été confirmé(e) et que le prévenu a omis d'être présent au tribunal en conformité avec de document [512(2)];
- ☐ d. qu'il paraît qu'une sommation ne peut être signifiée du fait que le prévenu se soustrait àla signification [512(2)];
- ☐ e. qu'il a été ordonné au prévenu d'être présent a l'audition d'une demade de révision d'une ordonnance rendue par un juge de paix et que le prévenu n'était pas présent à l'audition [520(5); 521(5)];
- ☐ f. qu'il y a des motifs raisonnables et probables de croire que le prévenu a voilé ou est sur le point de violer une (sommation ou citation à comparaitre ou promesse ou ordonnance de mise en liberté) aux termes de laquelle il a été mis en liberté [512.3];
- ☐ g. qu'il y a des motifs raisonnables et probables de croire que, depuis sa mise en liberté aux termes d'une (sommation ou citation à comparaitre ou promesse ou ordonnance de mise en liberté), le prévenu a commis un acte criminel [512.3];
- ☐ h. qu'une (citation à comparaître ou promesse ou sommation) exigeait que prévenu soit présent aux date, heure et lieu indiqués aux fins de la *Loi sur l'identification des criminels* et que le prévenu n'a pas comparu aux date, heure et lieu ainsi indiqués [512.1; 512.2];
- ☐ i. qu'une mise en accusation a été prononcée contre le prévenu et que le prévenu n'a pas comparu ou n'est demeuré présent devant le tribunal pour son poces (597);
- ☐ j. (pour tout cas qui n'est pas visé ci-dessus, reproduire les dispositions de la loi qui autorise)

Therefore, you are ordered, in Her Majesty's name, to immediately arrest the accused and to bring them before
En conséquence, il vous est enjoint par les présentes, au nom de sa Majesté, d'arrêter immédiatement le prévenu et de l'amener devant

#3 RAILWAY AVENUE EAST, NORTH BATTLEFORD, SASKATCHEW to be dealt with according to law. / pour qu'il soit traitéselon la loi.

(state court, judge, or justice) (indiquer le tribunal, le juge ou le juge de paix)

☐ Because there are reasonable grounds to believe that the accused is or will be present in (check if applicable)
Attendu qu'il existe des motifs raisonnables de croire que le prévenu se trouve ou se trouvera dans : (cocher s'il y a lieu)

(describe dwelling-house) (préciser la maison d'habitation)

This warrant is also issued to authorize you to enter the dwelling-house for the purpose of arresting the accused, subject to the condition that you may not enter the dwelling-house unless you have, immediately before entering the dwelling-house, reasonable grounds to believe that the person to be arrested is present in the dwelling-house.
Le présent mandat est également délivré pour vous autoriser à pénétrer dans la maison d'habitation pour y arrêter le prévenu sous réserve de la condition suivante: vous ne pouvez pénétrer dans la maison d'habitation que si, au moment de la faire, vous avez des motifs raisonnables de croire que le prévenu s'y trouve.

Signed on / Signé le DEC 0 2 2020 at / à NORTH BATTLEFORD in the Province of Saskatchewan. / dans la province de la Saskatchewan.

L.A. HAWRYLIW
Justice of the Peace #2054
Name of the judge, provincial court judge, justice who has issued this warrant
Nom du juge, du juge de la cour provinciale, du juge de paix ayant décerné ce mandat

Signature of judge, provincial court judge, justice or clerk of the court
Signature du juge, du juge de la cour provinciale, du juge de paix ou du greffier du tribunal

Province of Saskatchewan
Province de la Saskatchewan
Canada

Endorsement of Warrant
Visa du mandat

Criminal Code Form (Sections 475, 493, 597, 800 and 803) — **Formule du Code criminel (Articles 475, 493, 597, 800 et 803)**

WHEREAS this warrant is issued in respect of an offence mentioned in subsection 499 of the *Criminal Code*, I hereby authorize the release of the accused pursuant to section 499 thereof.
Attendu que le présent mandat est décerné relativement à une infraction visée au paragraphe 499 au *Code criminel*, j'autorise par les présentes la mise en liberté du prévenu en application de l'article 499 dudit Code.

DATED this / Signé le 2 day of / jour de December, A.D. / en l'an de grâce 2020 at / à North Battleford, Saskatchewan
in the Province of Saskatchewan.
dans la province de la Saskatchwan.

A Justice of the Peace in and for the Province of Saskatchewan
Juge de paix et pour la province de la Saskatchewan

WARRANT EXECUTED at / MANDAT EXÉCUTÉ le _____ (describe dwelling-house) / (décrire la maison d'habitation) _____ this / day of / jour de _____ A.D. / en l'an de grâce _____

Officer's name and badge number
nom de l'agent et le numéro de plaque

Signature of Officer
Signature de l'agent

Distribution: Police: Court Office

000051

DATE: 2020/12/07-09:21:49:408 (-18000000) (0)

SN02000 MO E
M CORE+ APID:RICHARDSONDAL740716/MSNME:RICHARDSON/MDOB:19740716

RECORD MODIFIED CORE
APID: RICHARDSONDAL740716
AND NOW READS

RICHARDSON, DALE JAMES SODAT

ACCUSED 1

SEX: MALE DOB: 1974-07-16 AGE: 46
ADDR: CALGARY
PROV: ALBERTA
APID: RICHARDSONDAL740716
ACCUSED CASE: 20-1016013
20201207092149202012070921 49

DATE: 2020/12/07-09:18:14:341 (-18000000) (0)

SN02000 MO E
A CORE+
SNME:RICHARDSON/G1:DALE/G2:JAMES/G3:SODAT/SEX:M/DOB:19740717/ADDR:CALGARY/PROV:A
B/APID:RICHARDSONDAL740716;A ACCD+
CASE:20-1016013/EXP:20221207/ONFILE:N/CRTD:AD/RESPONSE:CW/FR:N/OFFNO:1/OFF:CC
129(A) RESIST POLICE OFFICER/OD:20200722/CNO:90425782/REMNO:1/REM:(TJW)

RECORD ADDED CORE

RICHARDSON, DALE JAMES SODAT

SEX: MALE DOB: 1974-07-17 AGE: 46
ADDR: CALGARY
PROV: ALBERTA
APID: RICHARDSONDAL740716

RECORD ADDED ACCUSED

ACCUSED
AWAITING DISPOSITION EXP: 2022-12-07

		OD
	OFF (CW)	
1)	CC 129(A) RESIST POLICE OFFICER	2020-07-22
	CNO: 90425782	

REMARKS
1) (TJW)

CASE: 20-1016013

RECORD OWNER
SN20035 BATTLEFORDS DET 306-446-1720 2020-12-07 09:18

PERSON CORE RECORD ACTIVATED
20201207091814202012070918 14

DATE: 2020/12/07-09:23:28:871 (-18000000) (0)

SN02000 MO E
A WANT+ CASE:20-1016013/EXP:20231207/ONFILE:N/OFFNO:1/OFF:CC 129(A) RESIST
POLICE OFFICER/OD:20200722/CNO:90425782/ ENDOR:Y/1
OTHERS PLEASE ADVISE/RESPONSE:CW/REMNO:1/REM:(TJW)/APID:RICHARDSONDAL740716

CORE RECORD

RICHARDSON, DALE JAMES SODAT

ACCUSED 1

SEX: MALE DOB: 1974-07-16 AGE: 46
ADDR: CALGARY
PROV: ALBERTA
APID: RICHARDSONDAL740716

RECORD ADDED

	WARRANT	OFF (CW)	OD
1)	ARREST	CC 129(A) RESIST POLICE OFFICER	2020-07-22
	CNO: 90425782	ENDORSED	

REMARKS
1) (TJW)

CASE: 20-1016013 EXP: 2023-12-07

RECORD OWNER
SN20035 BATTLEFORDS DET 306-446-1720 2020-12-07 09:23
20201207092328202012070923 28

was ignored and favour was given to all of the parties implicated in this report.

Figure 28: RCMP Cst. Roy Bringing File Numbers for Torture and Criminal Negligence

...

58:51 Constable Burton Roy: Right, and Dale like—I mean you're a very intelligent man. You obviously understand how laws are interpreted, right?

59:01 Dale: Yes

59:02 Constable Burton Roy: And that's why when I talk to you about the civil law and stuff like that I say to talk to a lawyer because I don't know how the courts are interpreting those laws at every time. So what I'm gonna have to do is I'm gonna have to talk to Crown about the torture section--

59:15 Dale: The torture section, you can go talk to those people right now because the initial ones--

59:17 Constable Burton Roy: I need—I'm going to talk to Crown and find out what the threshold is and what they want—what they need in order to lay that charge, okay?

59:23 Dale: Because when you look at issues that I sent to the United Nations, I think that they probably wanna also look at those as well because--

59:33 Constable Burton Roy: And they're in this packet?

59:34 Dale: Yes.

...

1:01:26 Dale: Also talks about the issues that I had with the counselor from the SHA who was dissuading me from getting my file that I asked for repeatedly.

1:01:39 Constable Burton Roy: Uh, SaskHealth? SHA?

1:01:41 Dale: Yes, yes.

1:01:42 Constable Burton Roy: K.

1:01:43 Dale: And this was also something that was attached to the information. This was from an archbishop in the Vatican. Yes and he is—was speaking to Donald Trump in respect to some of the issues with COVID19 which is something I was also dealing with, with the SHA. Which I pointed out a glaring error that they made in one of their documents that they provided to the college of dentistry which I pointed out would actually cause problems to people's health if not properly remedied. See there's a table—let me see if it's actually—which is also a cause for concern because it's not good engineering practice in order to do so. Yes, there we go. This is the table right here. This also needs to be investigated because this can cause problems because it talks about the air exchanges per hour. It doesn't talk about anything with the mixing factor, alright? And so we went and looked at the CDC report because I'm an engineering technologist but it didn't have it in the appendix but I found the actual Table S-31 which comes from this—came from a table in 1994.

...

1:06:29 Dale: ...This is the Saskatchewan Health Authority—the problem with what the Saskatchewan Health Authority has done is also—they've done things that are going to endanger people's lives potentially. And this is a problem because that's constituting criminal negligence because this does not follow standard engineering practice when this table clearly defines--

1:07:11 Constable Burton Roy: And I don't know anything about engineering.

1:07:12 Dale: Okay so I'm gonna explain it to you.

1:07:15 Constable Burton Roy: So you're gonna tell me but I'm a layman so if you can tell me that it's pink and purple, I won't know any different, right?

1:07:18 Dale: Yes, but I'm gonna tell you this but you can see that there's lots missing on this. There's no mention of mixing factor. You can see that they're not even the same. There's not—there's not any mention of this mixing factor and it tells you that the mixing factor could also change these times way up to 10 times. So let me put this in laymen's terms, because I was looking at a dental office, okay? Looking at a dental office here in town. They asked me to look at their system and they told me what was going on. I came and looked at this. I saw that it was incomplete. I was talking to a professional engineer who has over 25 years of experience and another technologist who has over—that kind of experience so in that room between professional and technical experience, you're looking at probably close to 100 years of experience. Okay? We both—all of us came to the conclusion that we need to find out what that was before we could competently tell somebody to do this. Okay? To advise somebody on this. Okay?

1:08:24 Constable Burton Roy: Okay.

1:08:25 Dale: So when I did this, I came over here and I started to talking—and I sent them a message about this—I got no response. This is not good engineering practice. When you look at the professional bylaws of APEGS which is the engineers and geoscience act, this does not constitute this. This potentially, this would—somebody doing this—if I ever turned in work like this, I would lose my ability to practice.

1:08:55 Constable Burton Roy: Sure, so again, I'm just going to ask you—Where did you find this document?

1:08:58 Dale: This was from the original document from the CDC in 1994.

1:09:02 Constable Burton Roy: So that was in '94 and you found that on the website?

1:09:07 Dale: Yes.

1:09:08 Constable Burton Roy: So because you're not preview to what their office or inner office, you'd have to have somebody subpoena that.

1:09:16 Dale: Woah, woah, woah. It is—because I—K, I'm gonna have to now talk to you about this on an official capacity as a representative of DSR Karis Consulting

1:09:25: Unintelligible arguing

1:09:30 Constable Burton Roy: I'm here to talk to you about the torture. No I don't want to hear about your company. We're people we'll talk like people, I don't need you to talk in a professional capacity.

1:09:33 Dale: This is—this is--I'm telling you this in order to give the information that's pertinent to this. You're trying to impede me to tell you the rest of the facts.

...

1:09:50 Constable Burton Roy: So now you wanna make a secondary complaint about SaskHealth. So then why are we talking about SaskHealth?

...

1:10:10 Dale: Okay, then I'll make a second complaint about SaskHealth then. Okay then we'll do that.

1:10:13 Constable Burton Roy: Sure, absolutely if that's what you'd like to do then we'll do that. Okay so I wanna stay on topic as to what was going on with the torture and the domestic violence 'cause we haven't touched the domestic violence yet.

1:10:24 Dale: Domestic violence, I told you ...unintelligible... do that now. So we can start a file right now because this is actually very important because potentially with what happens here with what's going on with the SHA is that people can get killed—that will be criminal negligence because what it's supposed to do is that mixing factor is based—that table is based on a perfect mixing factor which does not exist.

1:10:48 Constable Burton Roy: And we're talking about mixing oxygen through air purifier?

1:10:50 Dale: This is like you go to a dentist office and they—you know they clean your teeth and they spray—you get mist in the air. This is an aerosol generating procedure.

...

1:11:12 Dale: Okay, so they get these guidelines so that we don't—we need to slow the transmission of the COVID19 because the aerosolization is how it transmits. Right? In droplets —coughing--is also one of the means in which it transmits.

1:11:26 Constable Burton Roy: Yeah. I understand what you're saying.

1:11:28 Dale: So they say that you need to have your HVAC system set up so that it will have so many air exchanges per hour so it's safe to bring another person in. Okay?

1:11:40 Constable Burton Roy: Yeah I understand what you're saying.

1:11:41 Dale: So this mixing factor of 1 is a perfect system which is--it doesn't exist—it's hypothetical in most cases. You might get close to it but your ventilation factors—can go—the mixing factor can go between 1 to 10. That number multiplies the times on that table. So if I have a mixing factor of 5 and I look on my chart here—but I don't know this because it's not stated anywhere—I look on that chart and it says 10 minutes but it's actually 50 because I have to multiply it by 5--

1:11:59 Constable Burton Roy: Okay, right so it takes 50 minutes to transfer the air out--

1:12:18 Dale: But I think it's 10 and I put another person in there. Well guess what? I've just infected that person. Okay and then say that person has another disease--

1:12:24 Constable Burton Roy: Okay, so how do you know that they haven't—that they don't have that kind of--

1:12:28 Dale: I've requested this for over a month--

...

1:13:20 Dale: And I asked them for this. They said that they had an engineer report coming and to call back in a couple of days. I did. They said call back in a week. I did. The registrar told me that he didn't know of any engineering report and he passed me off to the SHA. So I went to the SHA, they pushed me over to the business response team. So I sent emails to them about that. They didn't tell me. They have an obligation and they said if an engineer had to put this together, based on the act that governs them, they are under obligation to do so. I even talked to--

1:13:55 Constable Burton Roy: I'm sorry, I need to understand the obligation. Can you explain what you mean by they're obligated to give it to you and why? 'Cause I need to know why.

1:14:02 Dale: Because based on APEGS act—it's the bylaws which is the Engineering and Geosciences Act of Saskatchewan in section 5, it talks about doing things—you're operating in a manner that is in the public interest.

1:14:21 Constable Burton Roy: K.

1:14:21 Dale: And you have to take into consideration ethics and how people are going to be affected by the work that you're doing and you have to provide the information. This is standard engineering practice.

1:14:33 Constable Burton Roy: And I—again that's why I'm asking these questions right?

1:14:35 Dale: But I'm telling you this because this is something that they talked to us in school--they drilled it into our head—about ethical behavior and good engineering practice. This is not good engineering practice.

1:14:45 Constable Burton Roy: K.

1:14:45 Dale: The engineer who has done this—and I made a complaint to APEGS as well because I said that APEGS should be going after the person who put this out because it does not follow this good engineering practice and based on their own governing bylaws so--

1:15:04 Constable Burton Roy: So what did they do?

1:15:06 Dale: Whoever the engineer that they got this from, whoever put this out—they have—it's their responsibility—they govern the engineering practice from people who do their degrees in Saskatchewan. So--

1:15:16 Constable Burton Roy: Right, K. Again, I don't know that's why I'm asking the questions, right? 'Cause I don't know.

1:15:23 Dale: The SHA is the government entity and this is where we're gonna have to actually come in and start this complaint about the SHA because they have a responsibility as a government agency to look after the people. It's not in the best interest of the people of Saskatchewan to do these things and this has to be investigated because it's criminal negligence because people could die. People could lose their businesses and that's unacceptable.

...

1:17:25 Dale: No, no but I wanna make sure that these get copied and put in that file right away so that there is a file started on it for both the corporation and for myself as an individual.

1:17:37 Constable Burton Roy: Yeah. They're both gonna be started.

1:17:39 Dale: Well I would like to get the numbers of them once you've got those files started so that I have the reference numbers to keep for myself. Because I need—all of them.

...

1:18:15 Dale: And I will supply more information but this needs to be investigated immediately because these are being instituted and people are getting—places are getting—these are being installed across the province.

1:18:28 Constable Burton Roy: So what is they? What are we talking about?

1:18:29 Dale: K, I know for a fact from talking dental offices that these were being installed. I was dealing with personally the college of dental surgeons of Saskatchewan.

1:18:41 Constable Burton Roy: Okay.

1:18:41 Dale: And this is what they've used recommendations for people to start installing these.

1:18:44 Constable Burton Roy: And is that equipment?

1:18:48 Dale: They're using--they're sizing equipment—installing equipment based on this table which is faulty.

...

1:19:09 Dale: Yes but they can call Joe Blow contractor to go and do this and say, okay I talked to a salesman, this is good. Right? That's terrible. First of all, they should've provided the information. If they're gonna set the guidelines, it's their obligation to provide proper information. If you go and look at APEGS, the act that governs APEGS, it is clearly stated--

1:19:32 Constable Burton Roy: And I don't—I'm not familiar with that act.

1:19:34 Dale: Okay, so they're violating their acts and they're doing something that they know is negligent. And people can die because of it because it's to help prevent deadly disease and this is the problem, that's a huge problem. That's not in the best interest—that's the Saskatchewan

Health Authority. They're supposed to be looking after the health of the people. So we need to get this started. Put these on the file please and

...

1:21:59 Dale: Actually, I have somebody that you can call that will be able to explain this to you.

...

1:22:07 Dale: Uh, her name is Christine Rogers, she works at Cyprus Sales in Saskatoon. She was the former president of ASHRAE,

1:22:14 Constable Burton Roy: Okay, okay.

1:22:14 Dale: That's the American Society of Heating, Refrigeration and Air-Conditioning Engineers. She actually did work advising the SaskHealth Authority so she's probably the most qualified person in Saskatchewan to speak about this. So give her a call tomorrow morning and she will explain to you--

...

1:24:13 Constable Burton Roy: So you want 3 files.

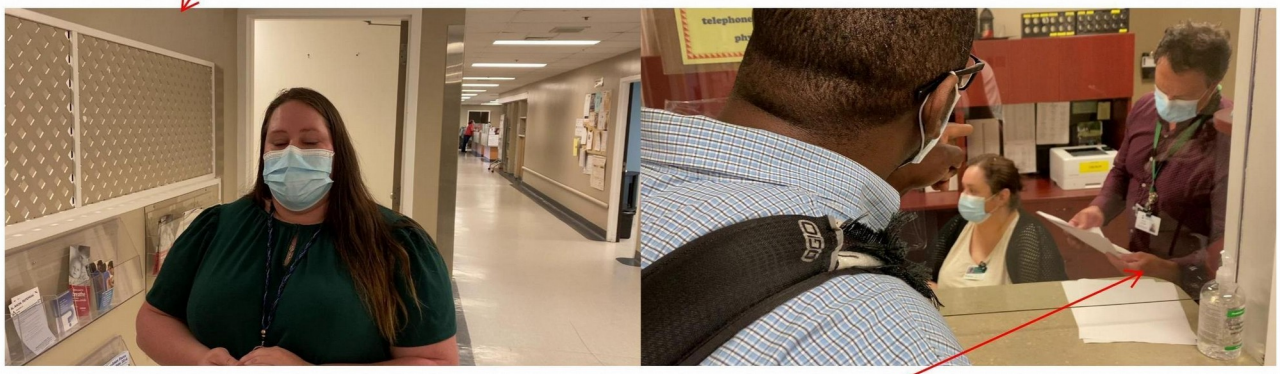
1:24:15 Dale: Yes, one for DSR Karis Consulting, which you were instructed to do so in an official capacity by its representative, and a second file relating to this coming from myself personally, Dale Richardson. So 2 files based on this and then you're gonna have another file based on this coming from Dale Richardson and those things need to be to be started today and I'd like to have the file numbers please.

...

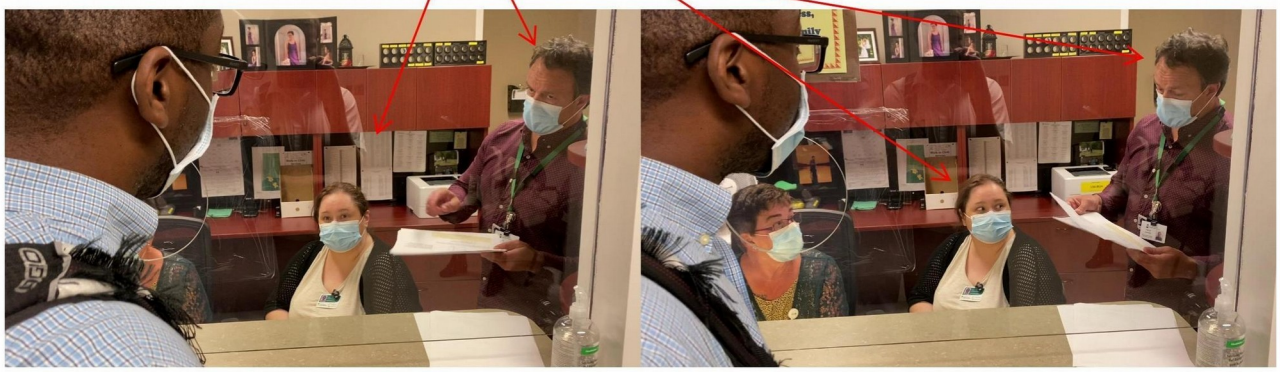

This is "Room Therapy"

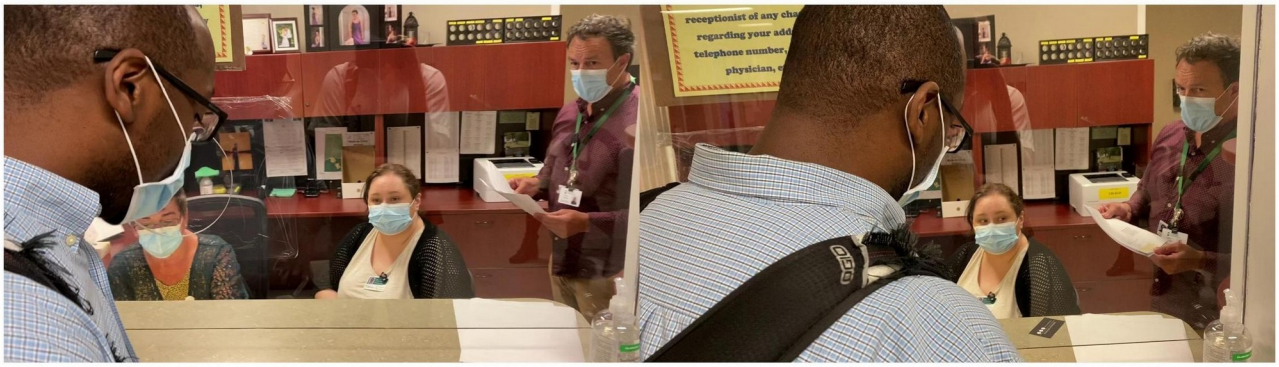
Exhibit BG: Questioning the SHA about the Mixing factor Issue July 7 2020

Asking for missing mental health files from agent of SHA



Asking agent of SHA about the mixing factor, and to have someone from engineering get back to Dale about its misrepresentation on the SHA guidance documents.





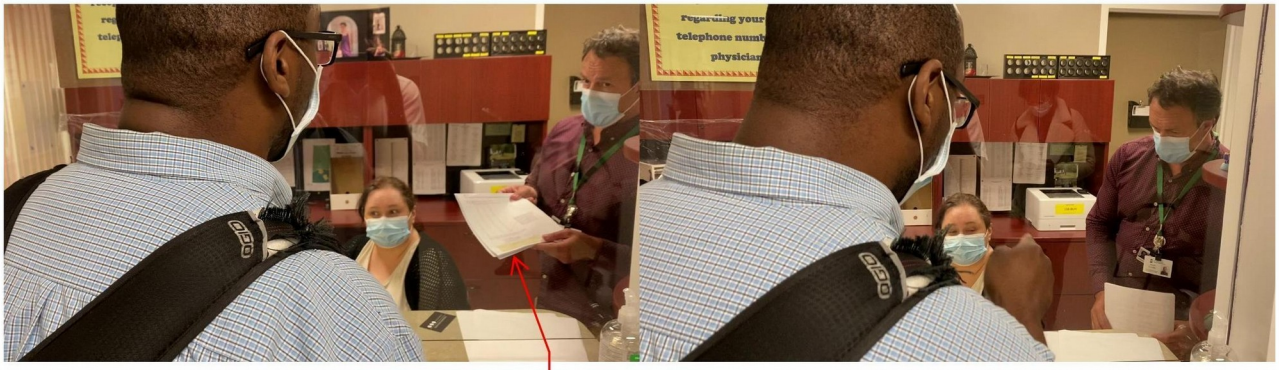
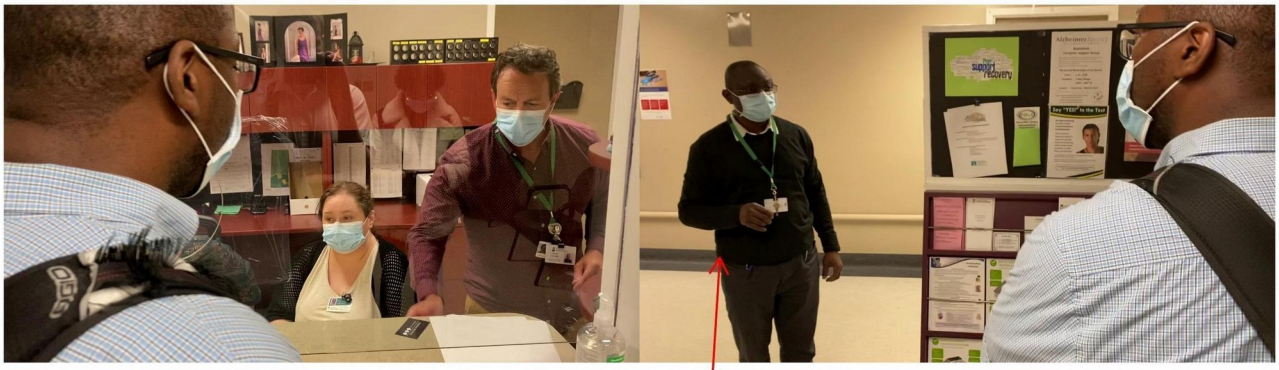


Table S-31and other documents placed in the hands of SHA



SHA Doctor who deemed Dale insane, was present when the mixing factor was discussed with the SHA.

Explaining the mixing factor issue and how it can create a problem for innocent people and spread covid and other deadly pathogens. Note the constipated look on his face.

The agent of the SHA was asking for the records that Dale had to "confirm" that they had included all of the missing records. Dale refused. Note the colour in the face of the agent and facial expression. It appears someone is very nervous to hand over the records.

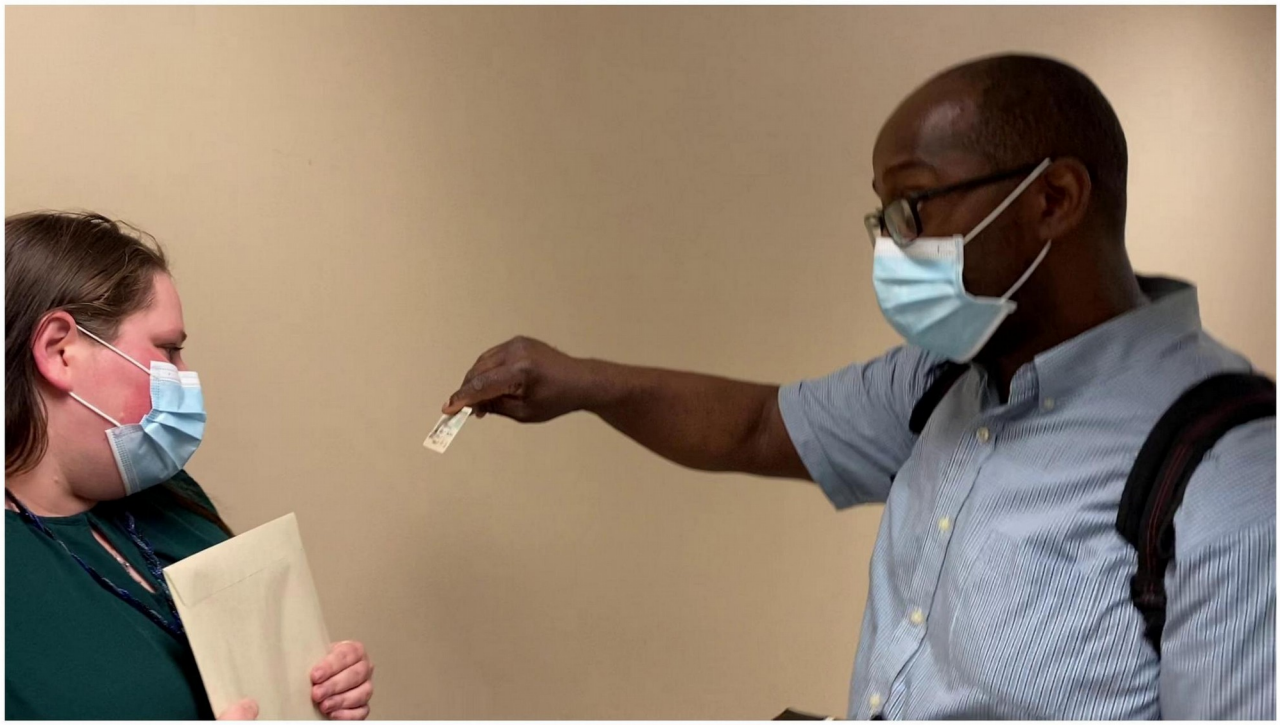
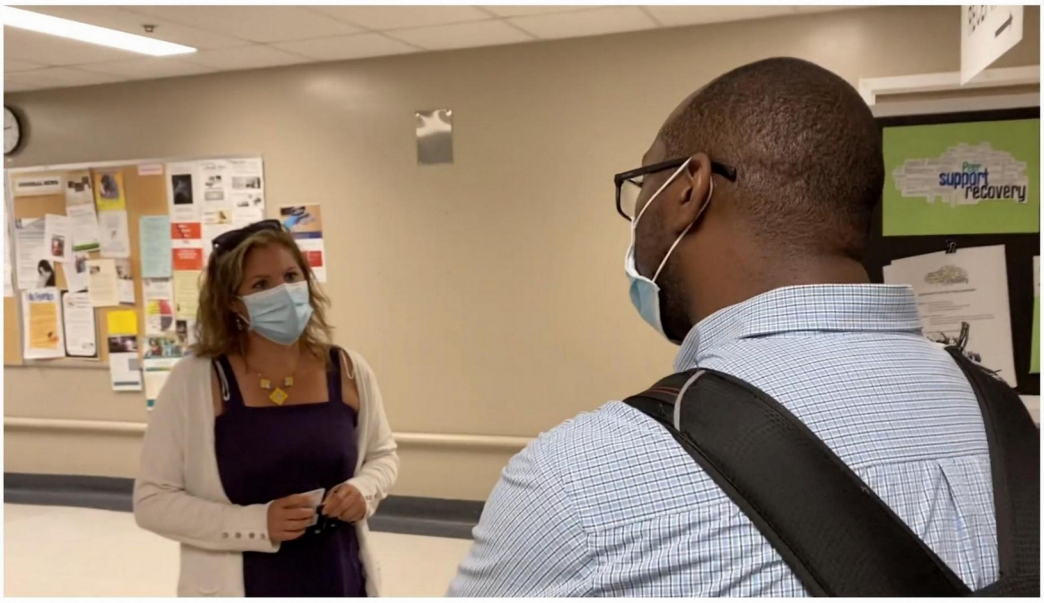
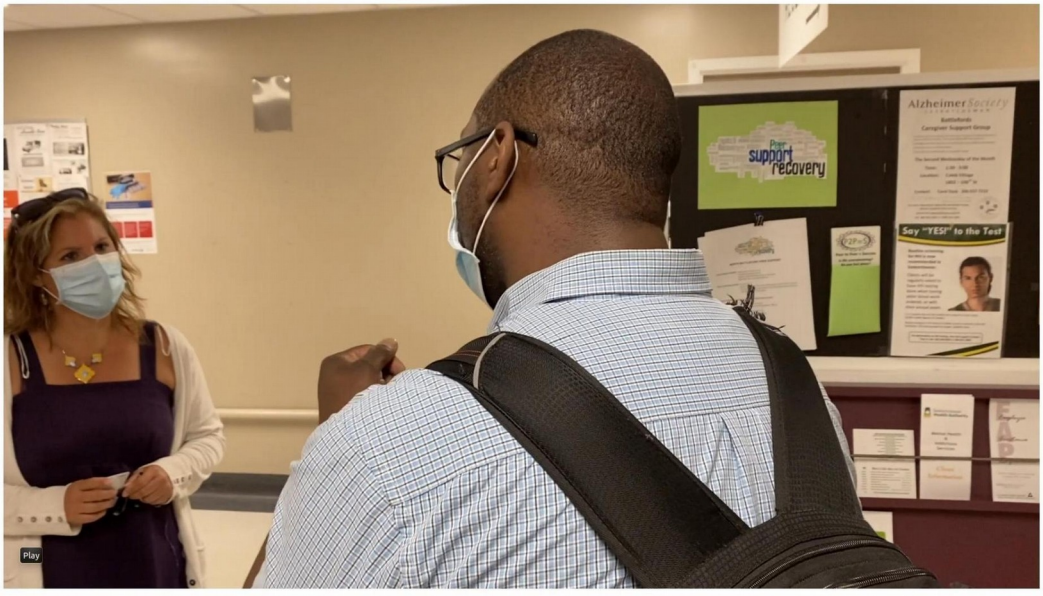


Exhibit BH: Cora Swerid Informed of the Torture and Criminal Investigations of SHA

Conversation with Cora Swerid at BMHC July 7th 2020 Approx 2:30 PM asking why her counselling notes were missing from my file.

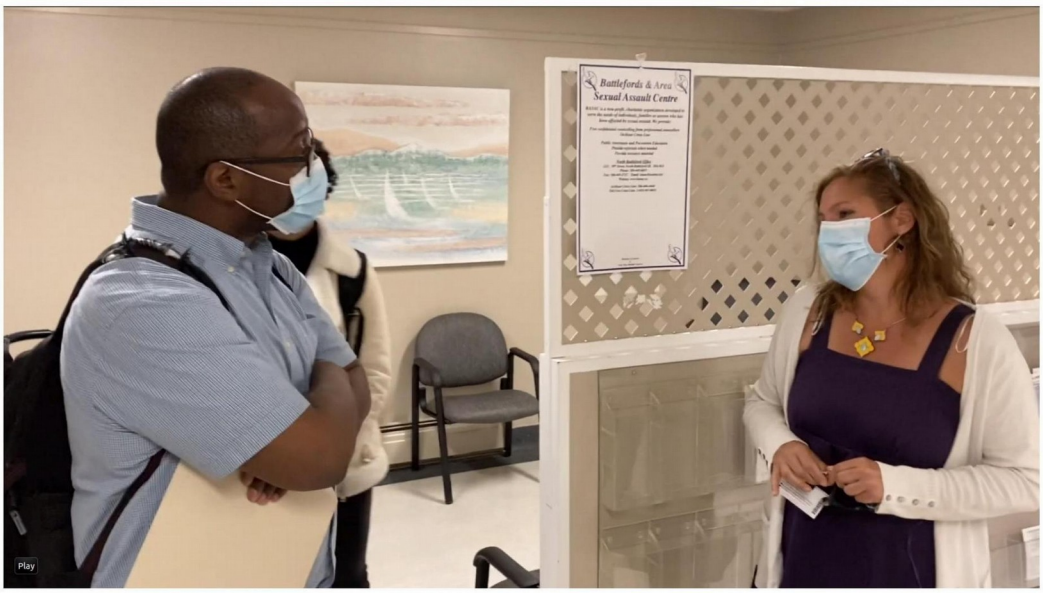



Play


support recovery
Alzheimer Society
Say "YES!" to the Test
Play


Play
support
recovery


POLICE
RECORDS
Play


Battlefords & Area
Sexual Assault Centre
Play


Peer
support
recovery

Transcript of Conversation with Cora Swerid July 7th, 2020 at BMHC

00:02 Cora: Hello.

00:03 Dale: Hello.

00:04 Cora: I didn't know you were here till just now.

00:06 Dale: Yes.

00:07 Cora: Okay.

00:08 Dale: So why was this not included in with the file earlier?

00:13 Cora: I don't know. I'm not the one that put it together.

00:18 Dale: And I also sent you an email.

00:21 Cora: And I responded.

00:22 Dale: And who did you pass along the information that I sent to you?

00:25 Cora: What information?

00:25 Dale: Because I sent you information that—as a representative of DSR Karis Consulting Incorporated, I sent information that's the property of DSR Karis Consulting Incorporated and I enquired what was done with the property that was supplied to you—that was given permission of by the corporation.

00:44 Cora: I'm sorry, I don't know what you're talking about.

00:47 Dale: I'll explain to you as I speak as an individual now. In some of that information that I sent you, there was corporate property, that was the property--

00:55 Cora: This is not the acceptable place to do this.

00:58 Dale: This is the acceptable place because at this point in time there's been a lack of transparency. There are 2 criminal investigations, actually 3 that implicate the Saskatchewan Health Authority. One of them, members of the Saskatchewan Health Authority is being implicated in torture 269.1, there's also—there's also 2 investigations for criminal negligence based on the aerosol generating procedures table which was also in the information package--

01:25 Cora: This doesn't have anything to do with me.

01:27 Dale: It was also in the information package supplied to you. Either way, is I wanted to know why this wasn't done and when I sent the email saying this was missing, and I needed to have it and I needed to pick it up, why didn't you tell anyone?

01:46 Cora: I responded to your email.

01:48 Dale: Not—not about this.

01:50 Cora: I don't know what that is.

01:52 Dale: This is the missing file that I didn't have and I sent it to you in an email.

01:58 Cora: I don't know what you're talking about. I don't know the information that you have. I don't know ...unintelligible... information that was ...unintelligible...

02:02 Dale: I have—I have—there is--there was missing—there's a file missing from my health records that I had sent to you in by email. And I had email confirmation that I sent it to you. ..unintelligible... why did you not ask ...unintelligible...

02:25 Cora: I had sent—responded to your email.

02:27 Dale: You did not respond to me about the missing information from the health file.

02:32 Cora: Yes I did. Yes I did. Check your emails.

02:33 Dale: Really? I didn't see anything that said to me about—when did you respond?

02:39 Cora: At 1:30ish around that time. I don't know.

02:45 Dale: After I was already on my—probably on my way here.

02:48 Cora: I didn't know you were on your way here.

02:51 Dale: Alright, have a good day Cora.

RE: The Report

Subject: RE: The Report
From: "Swerid, Cora SHA" <Cora.Swerid@saskhealthauthority.ca>
Date: 2020-07-07, 1:33 p.m.
To: 'Dale Richardson' [redacted]

Hello Dale,

I am not sure what you are referring to. I signed the release June 29, 2020. You should have received all information from health records with your request of nothing redacted.

If there has been a mistake made please let me know what information you are missing and I will follow up with health records.

Sincerely,
Cora

From: Dale Richardson [redacted]
Sent: Monday, July 06, 2020 4:11 PM
To: Swerid, Cora SHA
Subject: RE: The Report
Importance: High

Cora was aware of criminal investigations into the SHA. She was told by email and in person, this gives her strong motive to get the mental health warrant to avoid prosecution for any crimes.

Hi Cora,

Some of the information relating to the files that I requested were not with the information that was sent. The information pertaining to yourself and Kimberly were not with the documents that I received in the mail. I will be there to pick them up in person as there is a criminal investigation launched into the SHA on behalf of myself and a federal corporation. I do not want any information mailed and pass this information along to the people who can do something. There is also an ongoing investigation of torture in which agents of the SHA are implicated in. any such refusal of my request is not acceptable. Given the nature of this situation this request should be complied with since I do not want any more issues going forward.

Have the files ready for me without any edits. Any other action outside of the desired action will be viewed as a hinderance since the information did not come with the package I requested.

Kind Regards,

Dale Richardson

From: Swerid, Cora SHA <Cora.Swerid@saskhealthauthority.ca>
Sent: July 6, 2020 2:28 PM
To: Dale Richardson [redacted]

RE: The Report

Subject: RE: The Report

Hello Dale,

I will close my involvement as per your request. I appreciate you sharing.

It was nice working with you.

Best,
Cora

From: Dale Richardson [redacted]
Sent: Wednesday, July 01, 2020 3:51 AM
To: Swerid, Cora SHA
Cc: SHA Info; SHA Executive
Subject: FW: The Report
Importance: High

Hi Cora,

I have to inform you that there is a conflict of interest and that I have to ask you to step away as my counsellor effective immediately and hand over all documents pertaining to my file in their entirety. This report is from a third party and I will also forward you what I have sent to the federal government.

If you have any questions or concerns, feel free to reach out to me and ask.

Kind regards,

Dale Richardson, MET, TT (AB)
Chief Executive Officer
DSR KARIS Consulting INC.
North Battleford, SK
[redacted]

From: Robert Cannon [redacted]
Sent: July 1, 2020 3:29 AM
To: Dale Richardson [redacted]
Subject: The Report

Dear Dale,

The report and the license is in the document attached to this email.

T-1404-20

FEDERAL COURT

BETWEEN:

Dale Richardson

Plaintiff/Applicant

- and -

Royal Canadian Mounted Police, et al

Defendant/Respondent

AFFIDAVIT OF CST. [redacted]

I, [redacted], peace officer, of North Battleford, Saskatchewan, MAKE OATH AND SAY THAT:

1. I am a Constable at the North Battleford Royal Canadian Mounted Police ("RCMP") Detachment in North Battleford, Saskatchewan.

2. I have personal knowledge of the matters and facts contained herein except where stated to be on information and belief and where so stated I verily believe the same to be true.

3. I have reviewed the Injunction Motion dated March 29, 2021, wherein the Applicant seeks injunction orders against the RCMP. The Applicant makes allegations in relation to several interactions between the Applicant and RCMP members, primarily focusing on the arrests of the Applicant and his daughter, Kaysha Dery, which occurred on July 23, 2020.

4. I was the Lead Investigator during the arrests. Mr. Richardson was arrested on the basis of a mental health warrant and Ms. Dery was arrested on the basis of a detention order.

5. Attached as Exhibit A to this affidavit is are Occurrence details in relation to the arrests (the "Occurrence Report"). The Occurrence Report includes officer notes by myself and four other attending RCMP members. I have reviewed the Occurrence Report and believe its contents to be an accurate representation of the arrests and the transport of the Applicant and Ms. Dery to hospital.

6. I make this affidavit to inform this Honorable Court and for no improper purpose.

SWORN~~/AFFIRMED~~ BEFORE ME
at, North Battleford, Saskatchewan,
this 6 day of April, 2021.

Commissioner for Oaths
for Saskatchewan

A Commissioner for Oaths for Saskatchewan being a police officer.

[redacted]

Protected B

Occurrence details

RCMP-GRC , K Division
Printed: 2021/03/29 14:28 by 000279652
Occurrence: **20201016013**

This is Exhibit "A" referred to in the Affidavit of Member Affiant sworn before me this 6th day of April, 2021.

A Commissioner for Oaths in and for the Province of Saskatchewan.

Commissioner for Oaths for Saskatchewan being a police officer.

Occurrence details:

Report no.:	20201016013
Dispatch type:	Mental health act
Occurrence type:	Resists/obstructs peace officer 129 CC (FIP)
Occurrence time:	2020/07/22 16:39 CST -
Reported time:	2020/07/22 16:39 EDT
Place of offence:	1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)
Source:	Phone
Priority:	Urgent
Clearance status:	Cleared by charge/charge recommended
Concluded:	No
Concluded date:	
Summary:	Mental health warrant fro Dale Richardson. Member attend the QB court in Battleford and arrest Dale. Dale resisted arrest. Dale was brought to BUH. Dale later release and he left for Alberta. Information laid and warrant issued Cst. [redacted]
Remarks:	

Associated occurrences:

- Same event; Same person / 20201014838 / Mental Health Act - Other Activities (FIP) / 2020/07/22 13:41 CST / 20200722 13:41:21:060

Involved persons:

- RICHARDSON, KAYSHA / Arrested / DOB: Privacy Act Gender: Female Privacy Act Privacy Act (Division: F, District: Central, Detachment: Battleford Municipal, Zone: BFD, Atom: 2) (Cellular phone) Privacy Act DL: Privacy Act (Voice) Privacy Act
- RICHARDSON, DALE JAMES SODAT / Arrested, Charged / DOB: 1974/07/16 (46) Gender: Male (1292 95 STREET, NORTH BATTLEFORD, SK Canada (Division: F, District: Central, Detachment: Battleford Municipal, Zone: BFD, Atom: 2) (Voice) (306) 441-7010) FPS: 755786C DL:AB:150015170
  (Voice) (306) 441-4626
  (Cellular phone) (306) 392-0185
  (Cellular phone) (403) 472-2109
  (Voice) (403) 455-0406
  (Voice) (403) 207-1989

Involved addresses:

- 1052 101 STREET / Occurrence address / NORTH BATTLEFORD, Sask, Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)

Involved comm addresses:

Involved vehicles:

Involved officers:

Protected B

Printed by: 000279652 Date: 2021/03/29 14:28 Computer: K1264198L Page 1 of 10

- Supervising officer / [redacted] / #000098469 / PROS / Officer / F DIV INDIAN HEAD DET / 2021/02/21
- Assisting unit / F DIV BATTLEFORDS CMECC / F0584 / RCMP / Assignable / 2020/12/10
- Other assisting employee / [redacted] / #000203453 / PROS / Police other / F DIV BATTLEFORDS MUN DET / 2020/07/23
- Supervising officer / [redacted] / #000162614 / PROS / Officer / F DIV REGINA SPECIAL I-PROV / 2020/07/23
- Supervising officer / [redacted] / #000046384 / PROS / Officer / F DIV BATTLEFORDS MUN DET WATCH 3 / 2020/07/23
- Primary unit / F DIV BATTLEFORDS RURAL DET-TEAM C / F0727 / RCMP / Assignable / 2020/07/22
- Dispatched officer; Lead investigator / [redacted] / #000276890 / PROS / Officer / F DIV BATTLEFORDS RURAL DET-TEAM C / 2020/07/22

Involved property:

Modus operandi:

General report:

Occurrence: 20201016013 Resists/obstructs peace officer 129 CC (FIP) @2020/07/22 16:39 EDT (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Me

Task: TK20202132910 [Init rpt - Closed] Due: 2020/11/30 18:43 EDT #009999997 [redacted] ->#000276890 [redacted] Richardson, Dale – Warrant + Resist 20201016013CF1: 20201016013; RICHARDSON, D. (FM7 Warrant) (Dale in Warrant, Please assign to CMECC as he i

Author: #000276890 [redacted] *Report time:* 2020/07/23 11:41 CST
Entered by: #000276890 [redacted] *Entered time:* 2020/07/23 11:41 CST
Remarks:
Narrative:

2020-07-22

17:00 hrs MemberA was updated by [redacted] that a mental health warrant had been issued for Dale Richardson. [redacted] told [redacted] that Dale will be attending QB court in Battleford at 10:00 AM the following day and that member can arrest him there.

2020-07-23

09:00 hrs: [redacted] and and [redacted] attended the court house. [redacted] sat inside the court house while [redacted] went to park farther away from the court house. [redacted] updated the Sheriff working at the court house that Dale will be arrested once he show up. [redacted] was requested by the staff that Dale get arrested outside the court house since they didn't want him in the building.

Around 09:40 hrs: [redacted] updated [redacted] that Dale vehicle was pulling in the parking lot of the court house. [redacted] left the court house and was standing on top of the steps. [redacted] saw Dale Richardson leaving the driver seat of a beige 4 door car. A younger white male that member knew to be Dale's son in law got out of the front passenger side. A female came out of the back driver side. The female was Dale's daughter Kaysha Dery. [redacted] updated [redacted] on the radio that Kaysha was also there since she had a detention order in [redacted] she didn't not respect her 14 days isolation due to Covid 19.

[redacted] approached Dale and told him that he was under arrest for an outstanding warrant under the mental heath act. Dale told [redacted] that he didn't had any authority to arrest him and started to back away towards the passenger back side of the car. [redacted] grabbed Dale's left arm and told him once again that he was under arrest and to put his hand behind his back. Dale grabbed on the inside of his car with his right hand and refused to cooperate with [redacted] and Cst. [redacted] arrived at the same time. [redacted] attempt to get Dale to released the vehicle but Dale refused to cooperate. [redacted] placed Kaysha under arrest. [redacted] let Dale go and went to help [redacted] [redacted] kept control of Dale while [redacted] and [redacted] were

dealing with Kaysha. Dale started to get more agitated seeing member arresting his daughter. Dale start to try to pull away from [redacted] and the vehicle to go help his daughter. The Sheriff came to help [redacted] in controlling Dale. As [redacted] and [redacted] got control of Kaysha and were placing her in the police truck, [redacted] and [redacted] arrived on scene to help. With the help of Cst. [redacted] and [redacted], [redacted] managed to pull Dale away from the vehicle. [redacted] managed to handcuff Dale left hand. Dale kept pulling away and resisting. Members finally got a hold of the right arm and handcuffed both arm behind his back. [redacted] searched Dale's pocket. Dale had a cellphone, a wallet and multiple USB stick. Dale said to give him to his agent (his son in law). His belonging were given to the son in law as per his request.

Dale was place in the back of the vehicle but refused to get in properly so members had to pull him in the vehicle from the other side. Dale was then blocking the door with his feet so member had to pull him the other side to close the door and them pushed him back inside the truck to close the second door. [redacted] then read Dale his rights as per card and the police warning.

09:51 hrs: Arrest Dale Richardson for outstanding MHA warrant and resist arrest.

09:52 hrs: Right to counsel do you understand? Answer: "You have made an illegal arrest"

09:52 hrs: Do you wish call a lawyer now? Answer: "I am the power of attorney of DSR"

09:53 hrs: Police warning, do you understand? Answer: "My agent will be my representative"

[redacted] then brought Dale to the Battleford Union Hospital. [redacted] left the court house with Dale at 09:55hrs and arrived at the Battleford Union Hospital at 10:05 hrs. [redacted] parked the police car by the back entrance while waiting that the doctors were ready to see Dale. Kaysha was also brought to the hospital by [redacted]. Kaysha was brought first and she complied and walk on her own in the hospital. Once in the hospital she however refused to comply with medical staff.

[redacted] then went back to his police truck were [redacted] was waiting with Dale. [redacted] open the back door to let Dale out. [redacted] asked Dale to come out. Dale refused and said to let him finish his prayer. [redacted] waited 5 minutes that Dale was done with his prayer. [redacted] then asked Dale again to come out of the Truck but Dale refused again and said that it was his rights to speak with Legal aid so he requested to speak with his agent. Dale gave two phone number and Cst. [redacted] tried both but none of them picked up. [redacted] gave one more chance to Dale to come out but he refused again. [redacted] and [redacted] both grabbed one of Dale's arm and forced him outside the vehicle. Dale kept refusing to follow member and members had to force him in the building by pulling on his arms. Once inside Dale was place in the conference room where the doctors tried to speak with him but it was unsuccesfull. Dale was then brought to a bedroom and with the help of medical staff was strapped to the bed, his handcuff were taken off and he was given medication with a needle by the medical staff.

Dale will be served with a summon for resist arrest once he comes out of the hospital.

Once Dale was release from the hospital, Dale left Battleford and now lives in Alberta.

Information will be laid and a warrant will be issue for his arrest.

General report:

Occurrence: 20201016013 Resists/obstructs peace officer 129 CC (FIP) @2020/07/22 16:39 EDT (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Me

Task: TK20202141980 [Further inv. required - Closed] Due: 2020/07/28 11:25 CST #000276890 [redacted] ->#000232417 [redacted] Supp + Notes 20201016013 Resists/obstructs peace officer 129 CC (FIP) @2020/07/22 16:39 EDT (1052 101 STREET, NORTH BATTLEFORD, SK Canada

Author: #000232417 [redacted] *Report time:* 2020/07/23 12:41 CST
Entered by: #000232417 [redacted] *Entered time:* 2020/07/23 12:41 CST

Remarks:
Narrative:
2020-07-22

[redacted] was directed to attended Queens Bench the day before to stop Dale Richardson from entering the court house. Dale Richardson was instructed that the hearing/court would be over the phone. Queens Bench did not want Dale Richardson to attend.

A Mental Health Warrant was signed by a Judge to apprehend Dale Richardson later this day.

2020-07-23

[redacted] and Cst. [redacted] went to the Queens Bench court house in Battleford to arrest Dale Richardson and to detain Kaysha Richardson if they attended. Dale Richardson had an Mental Health Warrant and Kaysha Richardson was given a order to self isolate for 14 days by the Sask Health Authority.

[redacted] dropped [redacted] at the court house. [redacted] waited around the block.

[redacted] saw the Jetta Belonging to Kaysha Richardson turning on 3rd ave towards toe court house. [redacted] informed [redacted]

Approach 0940hrs: [redacted] and [redacted] were waiting on a side block and drove over. [redacted] was trying to arrest Dale Richardson at the rear door of the Jetta. Dale Richardson can be seen grabbing the door and not going with [redacted]. Kaysha Richardson was outside the court house filming the arrest Dale Richardson. [redacted] went to help [redacted] because Dale Richardson was raising his voice and would not listen to Cst. [redacted] told Dale Richardson to stop resisting arrest and come with police. [redacted] grabbed an arm of Dale Richardson to pull him away from the vehicle but Dale Richardson pulled away.

[redacted] was seen trying detain Kaysha Richardson but she was not listening. [redacted] gave up on trying to arrest Dale Richardson at the moment and help [redacted] arrest Kaysha Richardson. Kaysha Richardson was given a health order to self isolate and [redacted] believed this posed as a greater risk to officer safety. Cst. [redacted] grabbed an arm of Kaysha Richardson to get her into handcuffs because she was not listen to Cst. [redacted]. Kaysha Richardson pulled away from [redacted] and [redacted] as the handcuffs were pulled out. The handcuffs were eventually place on Kaysha Richardson. Kaysha Richardson still was not cooperating with [redacted] and [redacted] as she was being escorted to the police vehicle. Kaysha Richardson went limp and fell to the ground because she did not want to go with police. [redacted] had Kaysha Richardson at the door of the police vehicle but she still did not want to go in voluntary. [redacted] went to the other side and pulled the backpack straps that Kaysha Richardson was wearing to slide her into the police vehicle.

[redacted] went back to help out with [redacted] dealing with Dale Richardson. Dale Richardson still not be compliant with commands that [redacted] was giving him. [redacted] and [redacted] arrived to help. Dale Richardson was pulled away from the vehicle and place against the police vehicle. Dale Richardson still resisting arrest was place into handcuffs. Dale Richardson was searched for officer safety. The belonging in his pockets were given to his "Agent" that was video recording members. Dale Richardson was voluntary asked multiple times to step in the vehicle and would not. Dale Richardson needed police assistance to get into the vehicle. Dale Richardson was slid in the rear seat on his back to fit in. It took some time to manage Dale Richardson's feet front stopping the door from closing.
[redacted] gave Dale Richardson his right.

Dale Richardson was transfer to Battleford Union Hospital for an assessment.

[redacted]
Battleford Rcmp.

Supplementary report:

Occurrence: 20201016013 Resists/obstructs peace officer 129 CC (FIP) @2020/07/22 16:39 EDT (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Me

Task: TK20202141969 [Further inv. required - Closed] Due: 2020/07/28 11:24 CST

#000276890 [redacted] ->#000291399 [redacted] Supp + Notes 20201016013 Resists/obstructs peace officer 129 CC (FIP) @2020/07/22 16:39 EDT (1052 101 STREET, NORTH BATTLEFORD, SK Canad

Author: #000291399 [redacted] *Report time:* 2020/07/23 11:44 CST
Entered by: #000291399 [redacted] *Entered time:* 2020/07/23 11:44 CST
Remarks:
Narrative:
2020-07-23

0955 hrs - [redacted] headed to QB court in Battleford to assist MemberA with the arrest of Dale RICHARDSON under the Mental Health Act as there was a warrant for his arrest.

0958 hrs - Upon arrival of [redacted] RICHARDSON was physically resisting arrest from Cst. MemberA and [redacted] after many commands to comply with the arrest. RICHARDSON was still not cooperating and was giving the members a hard time to get into the back of the Police Car. Force by physically lifting RICHARDSON and escorting him into the back of the police car had to be applied to gain compliance. Members were eventually able to get RICHARDSON in the back of the police car and taken to BUH for assessment by mental health doctors.

1015 hrs - [redacted] arrived at BUH mental health with MemberA [redacted] and Cst. [redacted] RICHARDSON was still not being cooperative with members and had to be escorted physically by [redacted] and MemberA into the ward where mental health doctors were waiting to see RICHARDSON. RICHARDSON was placed in front of the doctors and was talking and interrupting the doctors. RICHARDSON would not give them a chance a speak. The doctors had enough and automatically admitted RICHARDSON.

1035 hrs - [redacted] MemberA [redacted] and [redacted] escorted RICHARDSON to a room where to a bed where he was restrained by members initially and then by bed restraints. The restraints were applied by the registered nurse on scene.

1045 hrs - RICHARDSON was given two injections by the registered nurse to have him sedated as he was being loud and would not calm down and cooperate. RICHARDSON will be admitted and placed on assessment status until he is able to be released.

CH.

Mem3

Battlefords RCMP

Supplementary report:

Occurrence: 20201016013 Resists/obstructs peace officer 129 CC (FIP) @2020/07/22 16:39 EDT (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Me

Task: TK20202141998 [Further inv. required - Closed] Due: 2020/07/28 11:26 CST
#000276890 [redacted] ->#000261568 [redacted] CH - Supp + Notes 20201016013 Resists/obstructs peace officer 129 CC (FIP) @2020/07/22 16:39 EDT (1052 101 STREET, NORTH BATTLEFORD, SK C

Author: #000261568 [redacted] *Report time:* 2020/07/22 16:39 CST
Entered by: #000261568 [redacted] *Entered time:* 2020/07/23 12:35 CST
Remarks:
Narrative:
2020/07/23 approx. 09:45 hrs

[redacted] was patrolling the Battleford area when [redacted] asked for assistance over the radio in arresting Dale Richardson as he was resisting and not listening to any commands. [redacted] was at the Queens Bench Court house in Battleford.

[redacted] arrived and seen [redacted] and [redacted] struggling with trying to get Dale into custody. Dale was up against a vehicle and was refusing to put his hands behind his back. Dale had to be forced away from the vehicle and hands forced behind his back in order to be handcuffed. Once handcuffed Dale continued to resist and refused to get into the police vehicle. Dale kept saying that it was an illegal arrest and continued to resist. Members had to physically pick Dale up to get him into the police vehicle. Once inside Dale kept his legs straight, obstructing members from closing the door. Dale had to be pulled across the seat in order for the members to get the door closed.

[redacted] then went to [redacted] who was dealing with Dale's daughter, Kaysha Richardson. Kaysha was being detained under a the Saskatchewan Health Authority for refusing to self isolate. Cst. [redacted] assisted [redacted] as she had to removed the handcuffs from Kaysha to get her backpack off. Kaysha was very uncooperative and resisted at first which was the reason she had to be handcuffed. Kaysha agreed to cooperative to have her back removed. [redacted] held the bag while [redacted] removed her handcuffs. The bag was removed from her and then the handcuffs were placed back on.

[redacted] then followed [redacted] to BUH as that is where Kaysha is to be taken to have her assessment done as she is refusing to self isolate.

approx. 10:08 hrs

[redacted] arrived at BUH to assist [redacted], as well as [redacted] and [redacted] as they were there with Dale Richardson who is being admitted to the mental health unit.

[redacted] and [redacted] escorted Kaysha into the area where they are conducting the covid screening. Kaysha was refusing to take the covid test and causing issues with the nurses and not willing to cooperate with them. Kaysha was advised by Ken Startup with health authority that she will be held for the remainder of the isolation period if she is refusing to self isolate and take the test.

[redacted] then went with [redacted], [redacted] and [redacted] to assist with getting Dale from the police vehicle and into the mental health unit. Dale was refusing to get out of the police vehicle and cooperate. Members had to physically remove Dale from the police vehicle and escort him into the mental health unit.

Dale was brought into a conference room where the doctor wanted to speak with him regarding whats going on. Dale would not allow the doctor to speak and continually interupted him. The doctor gave the go ahead that he is to be admitted . Dale was then escorted to a room in the mental health unit. The nurses wanted Dale to be restrained using bed restraints until he is able to calm down. Dale had to be forced onto the bed and into the restraints.

Once Dale was restrained, [redacted] went back out with [redacted] who was still in the other area with Kaysha waiting to hear what the plan was as she was refusing the test and to self isolate.

11:06 hrs

[redacted] said that it looks like Kaysha will be brought to the Saskatchewan hospital as that is where the isolation area is. [redacted] said that the hospital is working on getting people in place for Kaysha to be brought over there but it could be several hours. [redacted] advised [redacted] that they will have to stay and wait there with Kaysha until the hospital calls.

12:21 hrs

[redacted] showed up to BUH to relieve [redacted].

CH

Mem5

62198

Supplementary report:

Occurrence: 20201016013 Resists/obstructs peace officer 129 CC (FIP) @2020/07/22 16:39 EDT (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Me

Task: TK20202141990 [Further inv. required - Closed] Due: 2020/07/28 11:26 CST #000276890 [redacted] ->#000177365 [redacted] Supp + Notes 20201016013 Resists/obstructs peace officer 129 CC (FIP) @2020/07/22 16:39 EDT (1052 101 STREET, NORTH BATTLEFORD, SK

Author: #000177365 [redacted] *Report time:* 2020/07/23 15:41 CST
Entered by: #000177365 [redacted] *Entered time:* 2020/07/23 15:41 CST
Remarks:
Narrative:
2020-07-23

[redacted] working this date, was told that Dale Richardson would likely be attending the Queens Bench Court in Battleford after being told not to attend the location. Further, Dale's daughter, Kaysha Dery, was to be self isolating due to her having contact with a covid positive, and she was not doing so. A detention order was issued should Kaysha attend the court house.

[redacted] waited at the court house, and [redacted] and [redacted] waited south of the court house. Richardson's Jetta could be seen turning north to the court house. [redacted] and Cst. [redacted] attended to assist [redacted].

[redacted] saw [redacted] trying to arrest and place Dale into custody, however, Dale was resisting. Kaysha was there, and she was filming the incident and obstructing [redacted] from placing Dale into custody. [redacted] told Kaysha she was detained under the public health order for refusing to self isolate. Kaysha would not give up her hands and kept trying to get closer to Dale who was resisting arrest. [redacted] could see that the situation was potentially volatile due to Dale resisting and Kaysha obstructing members. [redacted] knew that both parties had to be controlled quickly as to prevent any harm to police or public or Kaysha and Dale as they were not cooperative.

[redacted] tried to get hand cuffs on Kaysha, however, she pulled away, turned away, pulled her hands away and hit the handcuffs out of [redacted]s hands. [redacted] grabbed the cuffs, and received assistance from [redacted]. While being hand cuffed, Kaysha fell to the ground on purpose. Both handcuffs were applied at this time. Once Kaysha was secure in A109, [redacted] and [redacted] assisted [redacted] and [redacted] to secure Dale. [redacted] also showed up on scene to assist.

Once Dale was secured in a police vehicle, [redacted] made a phone call to [redacted] to update him on the situation and was given the number for Ken Startup who was the one at the health authority with the detention order. Kaysha wanted to give her back pack to the third party who was on scene and filming the encounter. [redacted] and [redacted] loosened her hand cuffs and gave the back pack to him as per Kaysha's request.

[redacted] called Ken and told him that Kaysha was in custody and he advised to bring her to the testing site at BUH. [redacted] then departed the court house and transported Kaysha to BUH. As Kaysha had been arrested for Obstruction and Resist arrest, [redacted] provided Kaysha her rights and she requested to speak to a lawyer once her hand cuffs were off.

Kaysha was escorted to the testing site where she was argumentative, and not cooperative as she would not consent to being tested for Covid 19. [redacted] remained at BUH while Kaysha was given a mental health assessment by the PACT worker. [redacted] maintained communication with Ken Startup and Bruce Eholt in regards to when Kaysha would be taken to Saskatchewan Hospital for isolation purposes as they had a wing set up for such.

At one point [redacted] was told by Bruce that because Kaysha was refusing to be tested for Covid that she might not be admitted to the ward at Sask Hospital. [redacted] relayed this information to [redacted] and [redacted] departed the hospital when relieved by [redacted].

Protected B

C. L. [redacted]st.

Supplementary report:

Occurrence: 20201016013 Resists/obstructs peace officer 129 CC (FIP) @2020/07/22 16:39 EDT (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Me

Task: TK20202132910 [Init rpt - Closed] Due: 2020/11/30 18:43 EDT #009999997 [redacted] ->#000276890 [redacted] Richardson, Dale – Warrant + Resist 20201016013CF1: 20201016013; RICHARDSON, D. (FM7 Warrant) (Dale in Warrant, Please assign to CMECC as he i

Author: #000162614 [redacted] *Report time:* 2020/07/31 12:46 CST
Entered by: #000162614 [redacted] *Entered time:* 2020/07/31 12:46 CST
Remarks: Supervisor review
Narrative.
2020-07-31

File reviewed on this date. good work on this file DD extended for service of the summons on Dale.

[redacted] A/Cpl

2020-10-28

File reviewed 2 week DD as SOC has left the province he is to be placed on warrant.

[redacted] A/Cpl

Ext. doc. occ report [PDF, 149.36 KB]:

Occurrence: 20201016013 Resists/obstructs peace officer 129 CC (FIP) @2020/07/22 16:39 EDT (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Me

Task: TK20202141969 [Further inv. required - Closed] Due: 2020/07/28 11:24 CST #000276890 [redacted] ->#000291399 [redacted] Supp + Notes 20201016013 Resists/obstructs peace officer 129 CC (FIP) @2020/07/22 16:39 EDT (1052 101 STREET, NORTH BATTLEFORD, SK Canad

Author: #000291399 [redacted] *Report time:* 2020/07/23 12:11 CST
Entered by: #000291399 [redacted] *Entered time:* 2020/07/23 12:11 CST
Person:
Address:
Vehicle:
Officer:
Remarks:

Ext. doc. occ report [PDF, 59.33 KB]:

Occurrence: 20201016013 Resists/obstructs peace officer 129 CC (FIP) @2020/07/22 16:39 EDT (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Me

Task: TK20202141998 [Further inv. required - Closed] Due: 2020/07/28 11:26 CST #000276890 [redacted] ->#000261568 [redacted] CH - Supp + Notes 20201016013 Resists/obstructs peace officer 129 CC (FIP) @2020/07/22 16:39 EDT (1052 101 STREET, NORTH BATTLEFORD, SK C

Protected B

Printed by: 000279652 Date: 2021/03/29 14:28 Computer: K1264198L Page 8 of 10

Author: #000261568 [redacted] *Report time:* 2020/07/22 16:39 CST
Entered by: #000261568 [redacted] *Entered time:* 2020/07/23 13:18 CST
Person:
Address:
Vehicle:
Officer:
Remarks:

Ext. doc. occ report [PDF, 296.56 KB]:

Occurrence: 20201016013 Resists/obstructs peace officer 129 CC (FIP) @2020/07/22 16:39 EDT (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Me

Task: TK20202132910 [Init rpt - Closed] Due: 2020/11/30 18:43 EDT #009999997 [redacted] ->#000276890 [redacted] Richardson, Dale – Warrant + Resist 20201016013CF1: 20201016013; RICHARDSON, D. (FM7 Warrant) (Dale in Warrant, Please assign to CMECC as he i

Author: #000276890 [redacted] *Report time:* 2020/07/23 15:56 CST
Entered by: #000276890 [redacted] *Entered time:* 2020/07/23 15:55 CST
Person:
Address:
Vehicle:
Officer:
Remarks:

Ext. doc. occ report [PDF, 255.17 KB]:

Occurrence: 20201016013 Resists/obstructs peace officer 129 CC (FIP) @2020/07/22 16:39 EDT (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Me

Task: TK20202146603 [Other rpt - Closed] Due: 2020/07/28 16:11 CST #000203453 [redacted] ->#000232417 [redacted] NOTES ON D RICHARDSON FILE 20201016013 Resists/obstructs peace officer 129 CC (FIP) @2020/07/22 16:39 EDT (1052 101 STREET, NORTH BATTLEFORD, SK

Author: *Report time:* 2020/07/23 16:12 CST
Entered by: #000203453 [redacted] *Entered time:* 2020/07/23 16:11 CST
Person:
Address:
Vehicle:
Officer:
Remarks:

Ext. doc. occ report [PDF, 226.64 KB]:

Occurrence: 20201016013 Resists/obstructs peace officer 129 CC (FIP) @2020/07/22 16:39 EDT (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Me

Task:
Author: [redacted] C. *Report time:* 2020/07/23 19:34 CST
Entered by: #000315663 [redacted] *Entered time:* 2020/07/23 19:32 CST
Person:
Address:
Vehicle:
Officer:

Remarks:

Ext. doc. occ report [DOCX, 11.56 KB]:

Occurrence: 20201016013 Resists/obstructs peace officer 129 CC (FIP) @2020/07/22 16:39 EDT (1052 101 STREET, NORTH BATTLEFORD, SK Canada S9A 0Z3 (BATTLEFORDS RCMP DETACHMENT) (Division: F, District: CENTRAL, Detachment: Battleford Municipal, Zone: BFD, Atom: C)) (Me

Task: TK20203763110 [Other rpt - Rework] Due: 2021/04/01 00:00 CST #000162614 [redacted] - >F DIV BATTLEFORDS CMECC CMECC Monitor Warrant Execution 20201016013 Resists/obstructs peace officer 129 CC (FIP) @2020/07/22 16:39 EDT (1052 101 STREET, NORTH BATTLEFORD, S

Author:
Entered by: #000059878 [redacted]
Person:
Address:
Vehicle:
Officer:
Remarks:

Report time: 2020/12/10 07:25 CST
Entered time: 2020/12/10 07:25 CST

Dale Richardson

From:	Dale Richardson
Sent:	October 31, 2022 7:02 PM
To:	rwcochrane@fbi.gov; stephen.johnson@ic.fbi.gov
Cc:	Kaysha Richardson; rob@getwisemail.com
Subject:	More evidence of Federal Treason, bioterrorism, and other serious crimes.
Attachments:	Law Enforcement Flash Drive.zip; Filed at North Charleston Magistrate Judge.pdf; 2022-10-24 Letter to Court of Appeal (002).pdf; Document for Law Enforcement Oct 25 2022_1.pdf; 2022-10-27 Letter to Court of Appeal (002).pdf; 2022-10-31 - Richardson v Richardson_CACV3745_CACV3798_CACV4048.pdf; KBOct31-2022.pdf; motion_for_relief_District Court of South Carolina Kaysha Oct 25 2022 w DC Letter.pdf; SC District Court Documents Oct 26 2022 w DC Letter Dale.pdf; Affidavit Filed Sept 16 2022 KB 1701-17295 Exhibit D_THE ENGINEERING OF BIOTERRORISM, CHILD TRAFFICKING, TREASON AND THE CRIME OF AGGRESSION UPDATE_1.pdf; Affidavit Filed Sept 16 2022 KB 1701-17295 Exhibit D_THE ENGINEERING OF BIOTERRORISM, CHILD TRAFFICKING, TREASON AND THE CRIME OF AGGRESSION UPDATE_2.pdf; Affidavit Filed Sept 16 2022 KB 1701-17295 Exhibit D_THE ENGINEERING OF BIOTERRORISM, CHILD TRAFFICKING, TREASON AND THE CRIME OF AGGRESSION UPDATE_3.pdf; Affidavit Filed Sept 16 2022 KB 1701-17295 Exhibit D_THE ENGINEERING OF BIOTERRORISM, CHILD TRAFFICKING, TREASON AND THE CRIME OF AGGRESSION UPDATE_4.pdf; Affidavit Filed Sept 16 2022 KB 1701-17295 Exhibit D_THE ENGINEERING OF BIOTERRORISM, CHILD TRAFFICKING, TREASON AND THE CRIME OF AGGRESSION UPDATE_5.pdf; Affidavit Filed Sept 16 2022 KB 1701-17295.pdf; Affidavit Filed Sept 21 2022 KB 1701-17295.pdf
Importance:	High

Special agents,

You have been provided more information for a complaint that was made based on evidence that was delivered in the month of July of 2022 to your office by Robert Cannon who is cc'd in this email. The attached research is protected by United States copyright and is on the public record. DSR Karis North Consulting Inc. ("Karis North") a Delaware corporation is presenting more evidence to add to that initial complaint. The CEO has advised Karis North that the crimes that have been outlined in the attached documentation have continued with impunity. Which includes without limitation, treason, child trafficking for the purposes of financial and sexual exploitation, bioterrorism, fraud, mortgage fraud, use of the civil courts to shield the criminal activity, murder and criminal negligence causing death.

Kaysha Richardson who is the CCO of Karis North has been unlawfully obstructed by rogue agents of the Department of Homeland Security to hinder the reporting of these crimes and preventing the development of critical infrastructure in the United States to prevent Karis North from helping to secure the critical weakness that has been used to interfere with the territorial integrity of the United States.

Kind regards,

Dale Richardson, B.TECH, MET, TT (AB), Associate, (SK)
Chief Executive Officer
DSR Karis North Consulting Inc.
Dover, DE

Dale Richardson

From:	Dale Richardson
Sent:	November 2, 2022 1:02 PM
To:	rwcochrane@fbi.gov; stephen.johnson@ic.fbi.gov
Cc:	Kaysha Richardson; rob@getwisemail.com
Subject:	RE: More evidence of Federal Treason, bioterrorism, and other serious crimes.
Attachments:	Letter to CPS DSR Karis North Consulting Inc Nov 1 2022S.pdf; DSR Karis Consulting Inc Letter to Premier Daielle Smith 01-11-2022.pdf; Karis North 2https__cocatalog.loc.gov_cgi-bin_Pwebrecon.pdf; Karis North https__cocatalog.loc.gov_cgi-bin_Pwebrecon.pdf; 2022-10-31 - Richardson v Richardson_CACV3745_CACV3798_CACV4048.pdf; Richardson v. Garland.pdf; Written Arguments CACV3798 Certified.pdf; Trench Brunson Threat Sept 15 2022 AUDIO-2022-09-19-08-41-52.m4a
Importance:	High

Special Agents,

Attached is a letter that has been forwarded to other parties along with the information that was attached to the email in the previous communication. This information is to supplement the information Robert A. Cannon supplied to your office in person on behalf of DSR Karis North Consulting Inc. (“Karis North”). The CEO has advised Karis North that the information provided to you is protected by United States copyright and the search of the copyright information has been provided. In the attached information demonstrates that the Court of Appeal of Saskatchewan is giving 15 minutes to explain the engineering report that is excess of 2,900 pages that explains the engineering behind the distribution of a biological weapon that was used to interfere with the territorial integrity of the United States and a summary of criminal activities suppressed and instigated using the civil and family court system.

Engineering Report Without Appendices.pdf

The same actions of using the civil and family court system have been used to conceal terrorist activity. Rogue agents within the Department of Homeland Security are also responsible for permitting this terrorist activity to continue.

Robert Cannon and Kaysha Richardson are cc’d in this email. For any questions or concerns, feel free to ask. Karis North requires the file number for its complaint that was initiated earlier this year when Mr. Cannon supplied materials to your office.

Kind regards,

Dale Richardson, B.TECH, MET, TT (AB), Associate, (SK)
Chief Executive Officer
DSR Karis North Consulting Inc.
Dover, DE

From: Dale Richardson
Sent: October 31, 2022 7:02 PM

To: rwcochrane@fbi.gov; stephen.johnson@ic.fbi.gov
Cc: Kaysha Richardson [redacted]; rob@getwisemail.com
Subject: More evidence of Federal Treason, bioterrorism, and other serious crimes.
Importance: High

Special agents,

You have been provided more information for a complaint that was made based on evidence that was delivered in the month of July of 2022 to your office by Robert Cannon who is cc'd in this email. The attached research is protected by United States copyright and is on the public record. DSR Karis North Consulting Inc. ("Karis North") a Delaware corporation is presenting more evidence to add to that initial complaint. The CEO has advised Karis North that the crimes that have been outlined in the attached documentation have continued with impunity. Which includes without limitation, treason, child trafficking for the purposes of financial and sexual exploitation, bioterrorism, fraud, mortgage fraud, use of the civil courts to shield the criminal activity, murder and criminal negligence causing death.

Kaysha Richardson who is the CCO of Karis North has been unlawfully obstructed by rogue agents of the Department of Homeland Security to hinder the reporting of these crimes and preventing the development of critical infrastructure in the United States to prevent Karis North from helping to secure the critical weakness that has been used to interfere with the territorial integrity of the United States.

Kind regards,

Dale Richardson, B.TECH, MET, TT (AB), Associate, (SK)
Chief Executive Officer
DSR Karis North Consulting Inc.
Dover, DE

Dale Richardson

From: Dale Richardson
Sent: November 3, 2022 5:15 PM
To: rwcochrane@fbi.gov; stephen.johnson@ic.fbi.gov
Cc: Kaysha Richardson; rob@getwisemail.com
Subject: FW: Richardson v MacDonald - 2022abkb732- Evidence
Attachments: 2022abkb732.pdf; Court Access.pdf; Irregular Document Management Order.pdf; The Engineering of Bioterrorism Copyright.pdf

Importance: High

Special agents,

Attached is evidence of intimidation of witnesses relating to the exposure of the distribution of a biological weapon that was used to interfere with the territorial integrity of the United States. It is further evidence of the civil courts being used to conceal terrorism and punish witnesses for the research owned by DSR Karis North Consulting Inc. add this documentation to the existing file.

Kind regards,

Dale Richardson, B.TECH, MET, TT (AB), Associate, (SK)
Chief Executive Officer
DSR Karis North Consulting Inc.
Dover, DE

From: Dale Richardson
Sent: November 3, 2022 5:01 PM
To: Paula Safadi <Paula.Safadi@albertacourts.ca>; Karam, Jessica <jessica.karam@justice.gc.ca>; Derek Allchurch (dallchurch@pipellalaw.com) <dallchurch@pipellalaw.com>; MastersCoordinator QBCalgary <MastersCoordinator.QBCalgary@albertacourts.ca>
Cc: K Chestermere Service (RCMP/GRC) <KChestermereService@rcmp-grc.gc.ca>; Dale Richardson [redacted]
Subject: RE: Richardson v MacDonald - 2022abkb732
Importance: High

To the Court,

Associate Chief Justice Rooke has been prohibited from sending any communication to any email owned or operated by DSR Karis Consulting Inc. (“DSR Karis”). The CEO has advised DSR Karis that Rooke is weaponizing the civil court to punish agents of DSR Karis for its criminal complaints against Rooke. The RCMP have been cc’d in this email for record that law enforcement was notified of the continued criminal intimidation by associate chief justice Rooke. The CEO has advised DSR Karis that each time Associate Chief Justice Rooke uses the civil court to intimidate witnesses a complaint will be made. The CEO has advised that DSR Karis North Consulting Inc. (“Karis North”) will also be notified because of the intimidation Rooke has perpetrated based on its research document titled (“THE ENGINEERING OF BIOTERRORISM, CHILD TRAFFICKING, TREASON AND THE CRIME OF AGGRESSION UPDATE (A PRELIMINARY REPORT AND ANALYSIS OF RISK)”) owned by Karis North and protected by United States copyright.

The CEO has advised DSR Karis that the Office of the Director of National Intelligence and the Federal Bureau of Investigation will be notified of the continued intimidation to suppress the distribution of a biological weapon used to interfere with the territorial integrity of Canada and the United States.

To the Court, do not send any communication unrelated to business matters pertaining to DSR Karis to this email. Paula Safadi and Associate Chief Justice Rooke are prohibited from sending any communication to any email owned or operated by DSR Karis directly or indirectly. The CEO has advised DSR Karis that each occurrence will be reported to law enforcement.

This communication will be forwarded to elected officials.

Kind regards,

Dale Richardson, B.TECH, MET, TT (AB), Associate, (SK)
Chief Executive Officer
DSR Karis Consulting Inc.
Chestermere, AB
[redacted]
www.dsrkarisconsulting.com
Tel [redacted]

D S R Karis Consulting Inc.
ENGINEERING REIMAGINED

From: Paula Safadi <Paula.Safadi@albertacourts.ca>
Sent: November 3, 2022 4:07 PM
To: Dale Richardson [redacted]; Unity [redacted]; Karam, Jessica <jessica.karam@justice.gc.ca>; Derek Allchurch (dallchurch@pipellalaw.com) <dallchurch@pipellalaw.com>
Subject: Richardson v MacDonald - 2022abkb732

Good afternoon,

Please see attached Memorandum of Decision and Orders of Associate Chief Justice Rooke.

Ms. Karam - could I please trouble you to forward this decision and its orders to other parties to the 2201 02896 and 2201 03422 Actions.

Mr. Allchurch – could I please trouble you to forward copies of the decision and its orders to Counsel for the opposing parties in the 1701 17295, 2001 14323, and 2001 16974 Actions.

Thank you,

Court of King's Bench of Alberta

Paula Safadi (she/her)
Executive Judicial Assistant to
Associate Chief Justice J.D. Rooke

E: paula.safadi@albertacourts.ca
P: 403-297-7575

Court of King's Bench of Alberta
Calgary Court Centre
2401N, 601 5 Street SW
Calgary, Alberta T2P 5P7

Dale Richardson

From:	Dale Richardson
Sent:	November 2, 2022 8:47 PM
To:	rwcochrane@fbi.gov; stephen.johnson@ic.fbi.gov
Cc:	Kaysha Richardson; rob@getwisemail.com
Subject:	RE: More evidence of Federal Treason, bioterrorism, and other serious crimes.
Attachments:	The Engineering of Bioterrorism Copyright.pdf; How Engineering Identified the Staging Grounds Reported to the RCMP and FBI Copyright.pdf
Importance:	High

Special Agents,

DSR Karis North Consulting Inc. ("Karis North") has provided proof of its materials being protected by United States copyright. Karis North requests information on the handling of its intellectual property protected by United States Copyright.

Provide file numbers for the materials owned by Karis North and protected by title 17 of the United States Code used to report the distribution of a biological weapon used to interfere with the territorial integrity of the United States.

Kind regards,

Dale Richardson, B.TECH, MET, TT (AB), Associate, (SK)
Chief Executive Officer
DSR Karis North Consulting Inc.
Dover, DE

From: Dale Richardson
Sent: November 2, 2022 1:02 PM
To: rwcochrane@fbi.gov; stephen.johnson@ic.fbi.gov
Cc: Kaysha Richardson [redacted]; rob@getwisemail.com
Subject: RE: More evidence of Federal Treason, bioterrorism, and other serious crimes.
Importance: High

Special Agents,

Attached is a letter that has been forwarded to other parties along with the information that was attached to the email in the previous communication. This information is to supplement the information Robert A. Cannon supplied to your office in person on behalf of DSR Karis North Consulting Inc. ("Karis North"). The CEO has advised Karis North that the information provided to you is protected by United States copyright and the search of the copyright information has been provided. In the attached information demonstrates that the Court of Appeal of Saskatchewan is giving 15 minutes to explain the engineering report that is excess of 2,900 pages that explains the engineering behind the distribution of a biological weapon that was used to interfere with the territorial integrity of the United States and a summary of criminal activities suppressed and instigated using the civil and family court system.

Engineering Report Without Appendices.pdf

The same actions of using the civil and family court system have been used to conceal terrorist activity. Rogue agents within the Department of Homeland Security are also responsible for permitting this terrorist activity to continue.

Robert Cannon and Kaysha Richardson are cc'd in this email. For any questions or concerns, feel free to ask. Karis North requires the file number for its complaint that was initiated earlier this year when Mr. Cannon supplied materials to your office.

Kind regards,

Dale Richardson, B.TECH, MET, TT (AB), Associate, (SK)
Chief Executive Officer
DSR Karis North Consulting Inc.
Dover, DE

From: Dale Richardson
Sent: October 31, 2022 7:02 PM
To: rwcochrane@fbi.gov; stephen.johnson@ic.fbi.gov
Cc: Kaysha Richardson [redacted]; rob@getwisemail.com
Subject: More evidence of Federal Treason, bioterrorism, and other serious crimes.
Importance: High

Special agents,

You have been provided more information for a complaint that was made based on evidence that was delivered in the month of July of 2022 to your office by Robert Cannon who is cc'd in this email. The attached research is protected by United States copyright and is on the public record. DSR Karis North Consulting Inc. ("Karis North") a Delaware corporation is presenting more evidence to add to that initial complaint. The CEO has advised Karis North that the crimes that have been outlined in the attached documentation have continued with impunity. Which includes without limitation, treason, child trafficking for the purposes of financial and sexual exploitation, bioterrorism, fraud, mortgage fraud, use of the civil courts to shield the criminal activity, murder and criminal negligence causing death.

Kaysha Richardson who is the CCO of Karis North has been unlawfully obstructed by rogue agents of the Department of Homeland Security to hinder the reporting of these crimes and preventing the development of critical infrastructure in the United States to prevent Karis North from helping to secure the critical weakness that has been used to interfere with the territorial integrity of the United States.

Kind regards,

Dale Richardson, B.TECH, MET, TT (AB), Associate, (SK)
Chief Executive Officer
DSR Karis North Consulting Inc.
Dover, DE

Dale Richardson

From: SRFax Delivery Notification <fax@srfax.com>
Sent: February 9, 2023 3:40 PM
To: Dale Richardson
Subject: SRFax Transmission Successful to ATTN: CST SIDHU - 1 306-446-1738
Attachments: 20230209143108-6507_04.pdf

Transmission Status:	**Sent**
Subject:	**File#2023-179141 Trafficking of Person and Persons under 18**
Ref. Code:	
Sender:	[redacted]
Fax Sent:	**Feb 09, 2023 04:33 PM**
Recipient Fax:	**1 306-446-1738**
Remote Fax ID:	**3064461738**
# of Pages Sent:	**9 of 9 (Call Length: 6:12)**

Open the attached file to view faxed document.

Preview of Page 1.

DSR Karis Consulting Inc.
1292 95TH ST
NORTH BATTLEFORD
North Battleford, SK S9A0G2
Tel: [redacted] **Fax: 639-630-2551**

Fax

To: ATTN: CST SIDHU **From:** Dale J. Richardson
Fax: 1-(306) 446-1738 **Date:** Feb 09, 2023 04:30 PM
Organization: Battlefords RCMP
Subject: **File#2023-179141 Trafficking of Person and Persons under 18**

Add this information to the file. Another witness statement will be sent shortly and other evidence and the record of this transmission will be provided to an Alberta RCMP detachment and other law enforcement agencies and other entities as needed.

DSR Karis Consulting Inc.
1292 95TH ST
NORTH BATTLEFORD
North Battleford, SK S9A0G2
Tel: [redacted] Fax: [redacted]

Fax

To: ATTN: CST SIDHU **From:** Dale J. Richardson

Fax: 1-(306) 446-1738 **Date:** Feb 09, 2023 04:30 PM

Organization: Battlefords RCMP

Subject: **File#2023-179141 Trafficking of Person and Persons under 18**

Add this information to the file. Another witness statement will be sent shortly and other evidence and the record of this transmission will be provided to an Alberta RCMP detachment and other law enforcement agencies and other entities as needed.

Statement of Dale J. Richardson
NB RCMP File#2023-179141
Attn: CST. SIDHU

1. This is a long and complicated incident that started primarily in North Battleford and spans many jurisdictions in multiple countries. For the multiple years I and my children have been living as slaves. I have witnessed my eldest daughter being tortured, abused, forced into circumstances to submit to the vilest conditions and my youngest daughter has been taken from me without lawful cause and has been retained as a means to punish me and protect others from facing the consequences of their crimes. Kimberley Anne Richardson (last known alias) who was also known before we were married as Kimberley Anne Hebert is an extremely abusive woman who has on many occasions assaulted my oldest daughter Kaysha Richardson. Kimberley was about 5'8" and 180-200lbs during this time and Kaysha is about 5'8" 125-130 lbs. There is a significant size difference between Kaysha and Kim. I have witnessed Kimberely on one occasion kick Kaysha from behind when she was walking out the front door of my house located at 1292 95th Street in north Battleford, SK. Kaysha fell over the stone fence in front of the stairs and almost hit her face on a rock. Kim said that she did not like that Kaysha was disrespecting me and I told her that while disrespect was wrong kicking someone from behind in a manner that could have cause them severe harm is not an acceptable response. Kim never apologized for that and had stated that she would do it again. During the entire time that Kim and I were married, I never received an apology from her once. In fact whenever she was angry with me she would become violent and physically attack me or damage my property. She has thrown my laptop down on the floor, she has withheld finances, food, and other necessities to whenever she felt it necessary to get what she wanted. I had a macbook that was taken in 2020 that was never returned. When I asked to use it she threatened me with a spousal rape charge. Kimberley rutinely intimidated and coerced me to try to get me to submit to her will. She was a person who often times took pictures of me in compromising situations in order to have what she termed an "exit strategy". She often told me that if we ever split up that she was afraid that I would take Karis from her because I had fought Winnipeg Child and Family services for my oldest daughter Kaysha and won after Kaysha became a permanent ward of child and family services. In fact the same type of treatment that I received from Winnipeg Child and Family services during my court matters is what I experienced in the family courts in Saskatchewan in principle. The level of removal of rights was to a much higher degree in Saskatchewan. This is an initial statement and I will have to make more in the future as it is a staggering amount of details that I will have to cover for the last few years. The family courts and civil courts that I have interacted with have much of the evidence of the human trafficking of myself and my two daughters and they played an active role in the trafficking and helped to facilitate the trafficking of human beings.

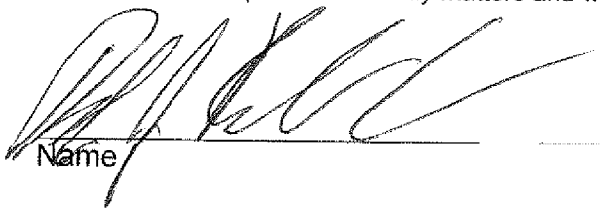
2. The divorce documents that were served on me containes evidence of intent to traffick human beings, including trafficking my youngest daughter Karis Kenna Nicole Richardson who turned 4 years old on February

Name _____ Witness _____ February 9, 2023

Statement of Dale J. Richardson
NB RCMP File#2023-179141
Attn: CST. SIDHU

9, 2023. I have not been permitted any contact with her. In the court documents I was only permitted to see here in the province of Saskatchewan under supervised visits in the jurisdiction that tortured me, which is a violation of the torture convention. Furthermore, the order issued by justice Elson on July 23, 2020 provided no means of contact for me to contact my daughter Karis and it gave Kaysha Richardson, Karis' only biological sibling that is known to me no contact whatsoever and no right to speak which is contrary to the law. However Kaysha was barred from seeing her sister and never given a right to speak. Before the court hearing, on February 15, 2020 I made a call to the Battlefords RCMP from the Battlefords SDA church when Kimberley assaulted Kaysha in the church. I have never witnessed Kimberley in such a rage. I was concerned that Kim was in no frame of mind to handle a child when in such a rage. Kimberley was so loud and out of control that the church service stopped and she started to pray. Before she assaulted Kaysha I was trying to talk to her in the mother's room of the church where people were inside with their children. On was a black man named Sam with his son. Kim came in and kicked the stool into the wall and his soon was scared. Karis was also disturbed. I gave Karis to Kaysha and instructed her to leave the room because I did not want Karis exposed to that kind of violence. Kim blocked the exit and held the door shut and would not let Sam leave. Sam did not want to be in the room and his son was crying. I told Kim repeatedly to let Sam leave and it was not lawful to confine someone in a situation when they did not want to be there. After repeated times speaking with here she moved from the door and Sam left. Kim went after Kaysha to get karis from her. I was afraid that Kim would assault Kaysha while she was holding Karis as Kim a few months before motion like she was going to punch me in the face when I was in the mothers room at the church with Karis sleeping in my arms and has attempted to strike me and spit in my face while I was holding Karis. When we went out to the front of the church Kimberley was yelling and screaming and karis was stressed and I was doing my best to comfort her as I had Kim standing in front of me and I was seated on a bench with Kaysha and the front of the church. My mother was also present. When Kim lunged at Kaysha and kicked her I decided to call the police because I did not see a peaceful solution to the situation. Ciprial Bolah had came and asked not to call the police and said that we should work out this matter. I decided under extreme duress to listen to Ciprian. That was a mistake and I believe that he took advantage of the situation.

3. Kim was upset because I helped Kaysha after she had told me that she was sexually assaulted in the centennial mental health centre in Ponoka AB that she was forced into by persons at Burman University in Lacombe AB after she was savagely beaten by her who I presume is her ex husband Dave Dery. The medication that Kaysha was given were making her worse and forcing someone who has just been savagely beaten into a mental health centre was extremely abusive especially when she was being sexually assaulted repeatedly. Kimberley tried to prevent me from going to visit her and was extremely abusive to me when I went and this information was a part of the family matters and was completely ignored. I also witnessed that when the



Name Witness

Statement of Dale J. Richardson
NB RCMP File#2023-179141
Attn: CST. SIDHU

medications that Kaysha was being given wore off, she would converse with me like I have remembered my daughter from doing normally. When she took the medication I could see a marked change. I would also expect that a doctor or nurse could observe those changes as well. She should have never been put on those medications in the first place. I demanded that the doctor get her off those medications and release her from the hospital. I also spoke of the risks to my daughter regarding her treatment and vulnerability as a result of the drugs being forced upon her when she had no need for them. Kimberley and her parents Raymond and Linda were opposed to me helping Kaysha and pressured me to leave Kaysha in the mental facility to be drugged and sexually assaulted. I refused. When I spoke to Kim and told her that Kaysha would be released and the doctors said that the best place for her to be was with me her father, Kimberley threatened to end the marriage and take Karis. Kim never wanted Kaysha to be a part of Karis' life and has verbalized that to me many times. Kim also made numerous threats to sell the house and put me on the street which were also included in the documents put before the family courts and other civil courts in Canada and the United States. During thus time I was suffering from high anxiety and depression from my situation. I had just lost my employment and was never given any reason, and I was in an extremely abusive relationship and I was in school working on completing my degree. Kim was consistently trying to get me to give up going to school and to take a job at the dollar store during much of my time during school. Kim is extremely controlling and abusive. My grades got better when we were separated.

4. After the incident where Kim assaulted Kaysha, I called a crisis line that day. Karis was stressed and pulling her hair and was obviously distressed. I was also distressed at the fact of the level of violence that took place, especially in front of my infant daughter Karis. I was advised to take some time with family in Alberta to take time to sort things out and then return to Saskatchewan to deal with things. I discussed this with my family as well. Before I made the call I told Kim that I needed time to think as there was an agreement pushed on me by members of the church after the assault. I was under duress and I do not think that the best decision was made. The entire incident was being blamed on me. I cannot be held responsible for someone choosing to make a display like that and choosing to assault someone. I did not have enough clothes for myself and Karis to spend a few days in Alberta. I contacted Kim and said that I was going to be going to Alberta for a few days to spend some time with family and that we would discuss separating when I return. I advised here that I cannot permit Karis to be in a volatile situation like that and I think that we should separate until the issues can be resolved. Clifford Holm and Gary Lund called me that day and both stated to me that "I was making a mistake". Clifford Hold is a lawyer who I had went to church with at the Battlefords SDA church in North Battleford. Gary Lund also went there as well. There was some issues arising from religious differences as both Clifford and Gary adhered to teachings that are contrary to the teachings of the Seventh-Day Adventist church,, ones that make them

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ineligible for church membership or to hold any positions in the church. Gary Lund at the time was the head elder of the church.

5. Kim told me that she contacted Gary, Cliff, Ciprian, James Kwon who was the pastor and several other women from the church for the mediation. I was forced to go to the mediation because I had to go by the house to get clothes and Kim had said that I should go to a meeting that I had scheduled with a local businessman in North Battleford, Terry Caldwell. I agreed to go. I brought my mother Agatha Richardson with me because I did not want to go by myself and I did not want to have any conflict there. When I arrived, Kim was there with her father Raymond and her friend Kari-Lynn. My mother also came inside. As I walked out the door, I noticed that the lockes were changed and I turned around to open the door but it was already locked and I had to knock on the door. Because my mother was inside they opened the door. I said that I wanted Karis and that I was going to leave. Kim refused to give Karis to me and said that I would have to physically fight her to take Karis. I called the RCMP. Kim had advised that she had made a report to the RCMP previously. Raymond changed the locks back and Kim agreed to stay at her parents place because I had no place to go and she had family there. Kim went ahead and set up a mediation. I had no one present at the mediation. The mediation was completely once sided and even though cliff was contacted he did not show up. It was the worst psychological torture that I had endured at such a short point. I was in an extrememly vulnerable position and the church members present were attempting to coerce me into putting Kaysha who was sexually assaulted repeatedly at the hospital in ponoka and savagely beaten repeatedly by Dave Dery on to the street in a homeless shelter to satisfy Kim and justified Kim's assault. Ciprian was laughing at me and they all were telling Kim that she was right and encouraging her to attack me and spoke of Kaysha like she was not a human being. I have descriptions of the mediation in other court documents and it can be viewed there as at this time I don't want to recound the horrific details of what took place there. When my mother came in to see me Ciprian got up and tried to slam the door on me.

6. There was a continued pattern of behaviours that were taken to aggravate me done with the acquiescence, consent and instigation of peace and public officers. I have documented many of these events in multiple civil court documents in many jurisidictions and Justice Zuk has been one of the worst offenders in permitting these abuses to continue as he has viewed the documentation of actions that were criminal to continue and remove them. One summer I believe that it was in the summer of 2018 or 2019 that Leenin Gratton and Ethan Hebert who at the time were about four were caught trying to insert their penis into the mouth of the other one in secret. I was present at the Silvester family cottage owned by Linda Hebert when this took place. Kris Hebert said that he would handle the matter. As the parent of Ethan I left it to him to handle. When Kim and I separated, I asked what was done regarding what happened with ath incident at the lake and Kim got made. Her counsellor as well as mine, Cora Swerid said that it was normal behavior for children to do that. I did not agree. I

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Statement of Dale J. Richardson
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never as a child ever had a thought like that in my life and I had never observed a child eb=ngage in that behaviour. I told Cora that I did not believe her and even if that was true, which I don't believe that it is, if someone inserted their penis into the mouth of my daughter, she would not think that it was a joke, and that it would destroy her psychologically. That is the main reason that I fired Cora as my clinician. I could not sanction getting any kind of advice from a person who thought that sexual behaviour in secret was acceptable for foury year old children. That makes me think that pedophilia is being concealed especially when considering the retaliatory steps taken to punish me every time that was ever mentioned in a civil court.

7. I had made CST Malissa SEKELA and a member who I believe to be CST REID who is a short Caucasian member that is pictured in the kidnappings on July 23, 2020 in front of the court of King's Bench in Saskatchewan aware of the attempts being made by person who are trying to frame me for crimes and who are taking steps to aggravate me to bait me into retaliating so police could be called on me. The car that I was driving and had possession of was taken, Kim was coming into the house and taking pictures of me while I was sleeping and disseminating it to church members to strengthen her position among people who were clearly biased against me, Kim was expecting me and Kaysha to bow to her every whim and to force Kaysha into her room like a dog every time she came to the house or to make her leave and making all kinds of unreasonable demands, or demanding that I give her access to my phone and other things in order to see Karis, and using Karis or any other circumstance to control the situation, no person demonstrating any concern for me in the situation, coercing people not to do business with me and using church position to do so, punishing me for any action that I took to assert my rights, stealing Karis at what Kim said was the advice of her lawyers. I ended up changing the locks so that I would not have Kim coming in the house while I was sleeping and harassing me and interfering with Kaysha.

8. During this time I was doing research for school at memorial univeristy of newfoundland and the research that I conducted has now been published and circulated to 338 journalists in various media outlets that outlined the crimes that were committed by the SHA that were criminally negligent. I reported this to the RCMP and CST Burton ROY did not file the evidence properly. I did a freedom of information request and I have the audio recording of the interview that I had with him and I also have a video recording of it and he lied about what I said and entered information like I was crazy. Burton ROY is directly involved and lied to create the narrative that I was crazy. He is the main public officer in instigating my torture and the means by which the fraud and forgery in th court of King's bench for Saskatchewan took place and the trafficking of me Kaysha and Karis. He also lied and said that Kaysha was sexually assaulted by Kim at the Battlefords Church which is also a lie. Lying to close a file is an unlawful sanction and he allowed multiple prejudicial acts to continue that would constitute torture for the purposes of the criminal code culminating on the kidnappings, torture and explicit human

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Statement of Dale J. Richardson
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trafficking on July 23, 2020 including the trafficking of a person under the age of 18 for the purposes of exploitation. Numerous person gained material benefit from the trafficking of Kaysha Karis and myself. I was stripped of everything while I was being strapped to a bed a drugged against my will. This was done to conceal crimes committed by the SHA and from the work that I have been doing with multiple doctors regarding the SARS-Cov-2 pandemic it has resulted in numerous deaths. This is part of the motive for the trafficking. There are multiple motives for this and a large number of persons involved in this and many complaints relating to this. The orders issued by Elson on July 23, 2020 are evidence of this trafficking especially when the court directed the RCMP to keep me out of the Court and that the RCMP had not properly filed mu complaints and lied in order to do so and tried to make me look crazy. This is compounded by the fact that a warrant for resist arrest exists for July 22, 2020 for and arrest that was made on July 23, 2020. Making matters worse was that it was placed before a judge on Dec 2, 2020 after I had filed a lawsuit in the federal court of Canada against the parties involved in what happened in North Battleford. This appears to me as retaliation. I was then picked up on that alleged warrant which is not lawful by any means in coutts Alberta after I attempted to enter the United States to report treason based on the crimes related to Covid which are currently under investigation in multiple jurisdictions in Canada and the United States. I have presented my research to Senator Ron Johnson and Rep Jim Jordan in the United States and other members of the United States Congress. Kaysha has got the the support of James Bradley a US senate candidate from California after having his legal team review the documents.

9. Civil courts in multiple jurisdictions are involved with this and they should be contacted. Since I have had extreme resistance in making the complaints I will request agency assist files for every jurisdiction, especially since judges, attorney generals, courts, government officials, police officers and elected officials are involved. I have had the Battlefords Mental Health centre say through e health that I was in the facility not yet diagnosed as of I believe may 10, 2022 almost 2 years after I was released.

10. In the notes from the freedom of information request, Robert Cannon was listed as my son in Law. The notes also stated that they knew Robert Cannon to be my son in law. How is that possible if Kaysha was never married to Robert? This leads me to believe that some sort of documentation may have been forged or some kind of deception took place to lead them to write that. Kaysha was never given any chance to speak in any court hearing that I was ever a part of. In fact at the Court of Appeal for Saskatchewan they made her turn off her camera and when she refused they shut it off. What has happened to me and my daughters is nothing short of slavery. While these crimes are not investigated, I and my daughters are slaves and that is not lawful in any place. I have never been given any legitimate reason why I cannot see my daughter and many people are trying to challenge my capacity when I have never in my life ever been accused of being crazy. I work out six days a

Name Witness

February 9, 2023
6 of 8

Statement of Dale J. Richardson
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Attn: CST. SIDHU

week and I have finished a degree in February of 2022 while fighting multiple court cases in multiple jurisdictions in Canada and the United States and my grades got better after I was tortured in Saskatchewan. In fact I carried a 4.0 GPA for my final semesters of my bachelor of Technology. My research was also graded by mu professors and my program head was responsible for overlooking half of it and he is a professional engineer with a PhD and has said that he would write me a letter of recommendation for the masters program.

11. At this point in time I am highly suspect of any person who at this point tries to challenge my capacity. I have documentation and letters from doctors who have a history with me that state otherwise and my daughter and my mother have also stated that I have no issues. It is only the people who have committed crimes against me or have some vested interest in concealing the crimes that have ever challenged my capacity.

12. Robert Cannon has forged documentation and submitted things to court that covered my signature or submitted documents to the courts that had signatures that were not mine to have a forged signature on the documents. I was reviewing the habeas corpus documents that he submitted to the court of queens bench in Saskatchewan and noticed that the dignature of the document for DSR Karis Consulting Inc. was not my signature and the document that I had notarized is completely different than mine and that the documents that bore Robert's signature were similar in nature to the way that the letters were written. I am not a handwriting expert, but I know what my signature looks like and the way that I write. Robert had considerable access to my home and the registered office of DSR Karis Consulting Inc. when I was strapped to a bed and drugged against my will. My mother told me that Robert indicated to her when Kaysha was released and when she wanted to go to Saskatchewan to see me and to try to get me out, that he did not wanted to go and said that if God wants him to get out he will get out. My mother came any way. My mother Agatha Richardson is prepared to give her testimony of what Robert said to her to dissuade her from coming to my aid while I was being tortured in Saskacthewan. While I was being strapped to a bed and drugged against my will is when I later learned that Robert Cannon sexually assaulted Kaysha Richardson in Black Diamond. Robert Cannon has sexually Assaulted Kaysha in multiple jurisdictions and has been given that access to do so based on what was done in North Battleford and the refusal of any member associated with the complaints in 2020 to investigate. Instead of investigating a conspiracy to kidnap torture and traffick me and my daughters was taken based on the evidence and actions that I witnessed. I could have been killed many times and in fact I am sure that was a desired outcome.

13. The divorce documents served to me contained evidence of fraud and intent to defraud. Elson could have never given over the house that I was living in to Kim under the family property act, even more so when Kaysha and I were living there and Kaysha had a lawful lease on the property as well as DSR karis Consulting

Name Witness February 9, 2023

Statement of Dale J. Richardson
NB RCMP File#2023-179141
Attn: CST. SIDHU

Inc. had its registered office there and a lawful lease. RW Elson presided over both cases. The documents that were provided to DSR Karis Consulting Inc. were not lawful court documents. They were copy and pasted onto a paper and were never delivered to the corporation. There was a court document of what was actually done at that hearing that I nor DSR Karis Consulting Inc. never received. This is probably why every time I tried to file a court document on behalf of DSR Karis Consulting Inc. it was thrown out f the court and the Court of Appeal changed the appeal filed by DSR Karis Consulting Inc. to me personally when there is no where in any law can that be done. There is a consistent patern of law breaking and using courts to do it to deny my the lawful right to protect myself or to protect my children. I have been stripped of everything and most importantly my children and the attorney generals of Saskatchewan, Alberta and Canada are directly involved with the trafficking of human beings and every court that I have come in contact with in canada and the United States. I have been told by every court action, or every person who refused to investigate or to follow the law that I and my daughters are slaves and they will force me into submission if I do not accept being a slave. As far as I know slavery has been abolished and I refuse to be anyone's slave and I refuse to allow my daughters to be tortured and raped to accept slavery being pushed on me. I will never stop, I will never quit or rest until these cases are investigated properly. I will also send the record of this statement and its transmission to the media, elected officials and to the public because I am tired of being treated like a slave and having my daughters inslaved in this most inhuman disgusting manner that has been sanctioned for far too long. No human being should ever be subjected to this kind of treatment. Every file number attached to my and Kaysha and Karis's names are related to this human trafficking complaint. This forced slavery needs to end. I want me and my daughters to be left alone. More information to follow. This is just the start.

14. Some of the other relate file numbers that are related to the case as other matters that have hindered the reporting or may have been retaliation for reporting these crimes or are in some way related to the crimes are as follows: 2022-1782862, 2023-1169539, 2023-147546, (RCMP Battleford), 2023-70016 Sexual Assault(RCMP Turner Valley, AB), 2023-111338 human trafficking (RCMP Turner Valley, AB), 23-1430 Sexual Assault/human trafficking (Volusia County Sheriff, Florida), #223230811 Criminal Harassment/ Human Trafficking agency Assist (Austin Texas Police Department), Calgary Police Service File #22453817 and #22453637, RCMP file 20221414593, 2023-72400 (torture, Chesteremere RCMP), 2023-59269, 2023-59284 (Chestermere RCMP), 2022-1715002 (RCMP Alberta), North Charleston Police Department #2022023800 Aggravated Domestic Assault with a Firearm, 2022023857 intimidation of a witness. This can be found from the department) and #23-0011116 Sexual Assault (Austin Police Department). San Antonio PD #22273597.

15. More information and statements to come from me and other witnesses.

Name _____ Witness _____ February 9, 2023

Unity

From:	Unity
Sent:	March 23, 2023 1:08 PM
To:	kathy.klassen@rcmp-grc.gc.ca
Cc:	Kaysha Richardson; Spectre, Peter (Ron Johnson); peters_whistleblower@hsgac.senate.gov; cathy.garcia@mail.house.gov; vgirdwood@vcso.us; [redacted]; Kdarcy@vcso.us
Subject:	Complaints and failure to investigate torture, sexual assault, child trafficking, treason against Canada and The United States
Attachments:	THE ENGINEERING OF BIOTERRORISM, CHILD TRAFFICKING, TREASON AND THE CRIME OF AGGRESSION UPDATE II_2.pdf
Importance:	High

Good morning Kathy,

I am writing this email to address some concerns. First, I would like to have the contact information of the person that you report to directly. I will refer to section 37 of the RCMP Act listed below:

Responsibilities

37 It is the responsibility of every member

(a) to respect the rights of all persons;
(b) to maintain the integrity of the law, law enforcement and the administration of justice;
(c) to perform the member's duties promptly, impartially and diligently, in accordance with the law and without abusing the member's authority;
(d) to avoid any actual, apparent or potential conflict of interests;
(e) to ensure that any improper or unlawful conduct of any member is not concealed or permitted to continue;
(f) to be incorruptible, never accepting or seeking special privilege in the performance of the member's duties or otherwise placing the member under any obligation that may prejudice the proper performance of the member's duties;
(g) to act at all times in a courteous, respectful and honourable manner; and
(h) to maintain the honour of the Force and its principles and purposes.

Now from this section of the RCMP Act, there are several issues arising from your conduct and some members that are under your direct supervision. There are also some issues that have arisen from the attached documentation and the plethora of evidence that I have supplied to your detachment.

First to respect the rights of all persons. I am a man who was born in the city of Winnipeg, in the Province of Manitoba and am a Canadian by birth. I am afforded all rights granted by the charter and I possess by birth the inalienable right to Life, Liberty, and the Pursuit of Happiness. Those rights are conferred to me by God. Yes, that comes from the Declaration of Independence, but those principles apply to all Mankind.

However, I will proceed with this transmittal from a Canadian context as that is where the authority from the RCMP comes from and where the jurisdiction is derived for your employer. Now my rights have not been respected and I have every right to voice my opinion that I think that my rights have not been respected.

I have provided a document that outlines how engineering was used to introduce a critical weakness into the infrastructure of Canada and the United States making both countries prone to biological attack. That is an act preparatory to levying war and that is expressly high treason for the purposes of the criminal code. The attached documentation discusses the section of high treason and describes elements of overt acts witnessed and demonstrated through poor engineering practices that are deliberate. The engineering sciences are rooted in mathematics and physics, and it is impossible for the weaknesses introduced to be accidental. I provided in the appendices of the attached report on how in practice that this critical weakness was being implemented and provided a means by which this critical weakness can be mitigated based on the engineering sciences of which I am trained in, and it is within the scope of my professional practice. It is NOT within the scope of the professional practice of the RCMP as they are police officers responsible for law enforcement.

When I come in to report the critical weakness that I have exposed during the course of my research that was conducted while I was completing my Bachelor of Technology at Memorial University of Newfoundland, it is your obligation to investigate it. Especially when it has affected the city of Chestermere which is in your jurisdiction and is your responsibility to investigate. There are other crimes such as criminal negligence that were also made part of the complaints that are directly tied to what I have uncovered. Deliberately and wilfully exposing people to increased chances of injury and death is not acceptable especially when there is a legislated duty to not do so. When I provided that information to you it is your duty to maintain the integrity of the law, law enforcement and the administration of justice. In this area you have failed.

Having members question my sanity without objectively examining the evidence is an affront to justice and it is nothing short of reprehensible conduct. Your detachment has been provided information from other professionals in various fields that has demonstrated that there is a systematic introduction of known hazards into workplaces and into the pandemic response that increases the chance of injury and death, and that conduct is expressly prohibited by the criminal code of Canada which it is your duty and obligation as a member of the RCMP to enforce. What I have observed is nothing short of a dereliction of duty from some members of your detachment. Since you are the commanding officer of the Chestermere detachment, this is a direct reflection on your leadership.

Next when I make a complaint about members under your direct supervision, it is a conflict of interest for you to discuss with anyone the nature of complaints that I made to the detachment or to make any determination on said complaints. No reasonable person would believe that you would be objective in that manner, and it should have been immediately passed along for someone outside of your detachment for review. Attempting to justify the complaint of the members to my sister who is a third party to me is an abuse of power, and it should have never been done. I will make you aware that a recording of the conversation that I am referring to exists and it will be made available to the public on both sides of the border. I will ensure that people see the kind of treatment that one will receive for doing what is right and let them judge for themselves who is telling the truth.

Next it is apparent that section 37c of the RCMP act was also breached. There was no prompt and diligent performance of duties by some of the members under your command and you have sanctioned this conduct. The very fact that I have not been given a file number from GIS member as I was advised by you that I would, is a clear demonstration of that. When someone is alleging a crime of the magnitude of treason, there is only one reasonable response. To investigate the claims. When the treasonable conduct is based on engineering sciences some tangible scientific evidence must be presented to refute the reasons for not investigating the claims. From a risk assessment perspective, the risk is far too great to not examine the complaint because the consequences are unacceptable and would result in the demise of Canada. Treason is the worst crime that can be committed against a country.

Section d of the RCMP act has also been breached as there is a plethora of conflicts of interests that have been ignored. Since there has been a number of conflicts of interest and that your detachment has been provided evidence that CST. Burton ROY lied based on the freedom of information requests that were provided to your detachment as part of evidence packages for both Chestermere and other detachments and that there was a warrant issued for a resist arrest on July 22, 2020, for an arrest that took place on July 23, 2020, there is a clear concealment of crimes by members.

Kaysha Richardson, my eldest daughter and I were kidnapped on July 23, 2020, and then taken to separate facilities owned and operated by the Saskatchewan Health Authority and tortured. This was done at the instigation of numerous members of the Battlefords detachment. There is a no defense clause in 269.1(4) of the criminal code. Any person who conceals the torture is a conspirator or an accessory after the fact and that includes members in your detachment. No member in your detachment has any authority to conceal any torture by any member under any jurisdiction in Canada or elsewhere. The RCMP act also prohibits it as well as section 12 of the charter and the convention against torture. Questioning my sanity is exactly what ROY did and it was demonstrated by the audio and video of the recording that he lied and inserted factually false information into the notes to make me appear like I was mentally unsound into the notes. When a wellness check is conducted by the AHS after criminal complaints are made based on engineering sciences without any examination or investigation and providing evidence to the contrary is intimidation and following a very similar set of circumstances as what has happened in Saskatchewan. Section e of the act is violated and is currently being violated as we speak because unlawful actions by members are being permitted to continue. There is no distinction of location of where the member is located from a plain reading of section 37(e) of the RCMP Act.

By the virtue of the aforementioned section 37(e) and all of the former sections mentioned in this email section 37(f) is also demonstrably broken. Concealing crime is in no way honourable and section 37(g) is now broken as well. Since concealing criminal conduct of members is not honourable, nor is any of the other issues mentioned in this transmittal, every responsibility outlined in section 37 of the RCMP Act has been violated under your watch and it is your responsibility as the detachment commander. Leadership comes with responsibility. I have a right to question your leadership and actions. In fact, it is my duty as a Canadian to question anything that affects my fellow countrymen and women. This country is a democracy, and it is We the People that rule this land, an you work for We the People and not just the Crown, for the Crown only rules with the consent of the governed.

I want the contact information for your direct supervisor, and I have a complete expectation that the crimes that I have made complaints are investigated in accordance with the criminal code, the RCMP Act, the Charter and the Convention Against Torture. Referring torture and treason related complaints to the Civilian Review and Complaints Commission is facilitating torture and treason as those are crimes that must be investigated objectively and swiftly. Evidence has not yet been filed, and information has been held by numerous agencies in Canada and the United States and this type of conduct has been noted in numerous jurisdictions. It is impossible that this type of conduct has been demonstrated in multiple jurisdictions in Canada and the United States spanning a space of over three years. One commonality is the presence of the attached engineering report or one of its previous iterations.

I am asking for the file number for GIS associated with my complaint made about CST A. SMITH. I also want you to reach out to the Volusia County Sheriff's Office and get the statement, the body cam footage and evidence provided by my daughter Kaysha Richardson to them for the torture complaints and other complaints that was submitted to them. This is not a request; you are obligated by the criminal code, RCMP Act and the Convention against Torture to do this. There are witnesses to the torture that have not yet been interview and this too has permitted the persons who have committed acts of torture to walk free in the jurisdiction and concealed criminal actions of torture. This conduct will also be reported to members of the United States Congress that I have been in contact with to demonstrate the national security risk to the United States that is taking place here in Canada. This email and its contents will be widely distributed to the people and to the churches in Canada and the United States. This is enough. Do what is right by the people of this country that you swore an oath to protect.

The Volusia County Sheriffs Office has been cc'd in the email for you to reach out and contact them. I have also provided the email address for Lisa Aulerich the RN from the United States who has provided a plethora of research and needs to make a statement for a number of the complaints and is a witness as well and needs to be provided a file number so that she can make her statement at her local law enforcement agency and to submit her evidence. Lisa's email is [redacted]. I expect that she will be contacted. Sexual assault and human trafficking are the highest priority crimes and Kathy as a woman I would imagine that you would not want another woman to suffer as a victim of numerous rapes that have not been investigated due to the present refusal of the Volusia County Sheriff's Office to hand over evidence and the interview notes and body cam footage for the purposes of the complaints. My daughter Kaysha is cc'd in the email and has provided evidence and was interviewed regarding the torture. Under the convention

against torture, you have an obligation to act. If you refuse to act in accordance with the law, I will pick up the phone and make a complaint. It is a crime to conceal torture. I am asking for an impartial investigation. That is all. I have a right to complain and have my evidence considered pursuant to article 13 of the convention against torture as does Kaysha and my four-year-old daughter Karis who has been punished unlawfully and taken as a result of torture and that is an aggravated assault and by virtue of the criminal code subjected to human trafficking. Torture is not a lawful means of obtaining a child regardless of the consent of a parent.

My house has been stolen with the participation of numerous members of the RCMP and that crime cannot be concealed. This evidence is also in the possession of your detachment. Also in the possession of your detachment is evidence of the distribution of a biological weapon that was used to interfere with the territorial integrity of Canada and the United States. Concealment of that evidence is a violation of numerous treaties, and it is an extremely hostile act against the United States of America. It is an act that carries the consequence of a military response. I am very sure that the People of the United States would not view these kinds of actions as favourable. Their constitution respects their inalienable God-given rights to Life, Liberty and the pursuit of Happiness. This biological attack was the mechanism by which widespread election fraud was perpetrated. This is problematic. As you may already know, I will not stop using every lawful means at my disposal until the matters set to your detachment are objectively investigated and directed to the proper agencies for impartial investigation. As you may know my sister Astra did work for the RCMP and has knowledge of this. I implore you to do what is set out in the RCMP act, and act with honour and dignity. The ball is in your court. Thank you for your time and consideration.

Kind regards,

Dale J. Richardson

DSR KARIS NORTH
CONSULTING INC.
ENGINEERING REIMAGINED

From: Dale J. Richardson
DSR Karis North Consulting Inc.
8 The Green, Ste A
Dover, DE 19901

January 24, 2022

To: Kaysha F.N. Richardson

Re: Authorization

Dear Ms. Richardson,

DSR Karis North Consulting Inc., a Delaware Corporation hereby authorizes you to transport this attached report "THE ENGINEERING OF BIOTERRORISM, CHILD TRAFFICKING, TREASON AND THE CRIME OF AGGRESSION UPDATE II" to the Volusia Country Sheriff's Office and any other such law enforcement, government representative, judicial authority or any such person or entity that you deem necessary for the purposes of reporting the criminal activity contained therein or any other unlawful activity in the United States of America, Canada or any other location as needed.

Permission is hereby granted for reproduction and distribution as needed for the aforementioned reasons and such actions necessary for reporting crimes outlined in Executive Order on Imposing Certain Sanctions in the Event of Foreign Interference in a United States Election issued September 12, 2018. This letter is a written document confirming a full restoration of all rights and privileges

vested in your position as Chief Communications Officer for DSR Karis North Consulting Inc. retroactively and effective immediately.

Dale J. Richardson
Director
DSR Karis North Consulting Inc.

Dale Richardson

From:	Dale Richardson
Sent:	November 18, 2022 4:13 PM
To:	USCIS; sherrelle.ecolden@hq.dhs.gov
Cc:	rwcochrane@fbi.gov; stephen.johnson@ic.fbi.gov; Kaysha Richardson; rob@getwisemail.com
Subject:	RE: Your recent inquiry (receipt #SRC-21-902-12192)
Attachments:	RE: Emailing: 2022SKCA133; Engineering Report Without Appendices_compressed (1).pdf
Importance:	High

Good day,

This information has been provided to clarify an email received from USCIS. Attention will be directed to the attached documentation shown in the link below. The attached documentation is a copy of the I-140 form filled out for Kaysha Richardson by DSR Karis North Consulting Inc. ("Karis North") a Delaware corporation.

[redacted]
my.sharepoint.com[redacted]

It appears that there is some confusion as to what corporation has filed the documentation and who the beneficiary is. Kaysha Richardson has been attached to the email as she is the person that the I-140 has been attached to. The CEO has advised Karis North that Kaysha Richardson is the posterity of American Indians and not subject to immigration. The CEO has advised Karis North that the detention of Kaysha Richardson by a subsidiary of the Department of Homeland Security is not lawful. The CEO has advised Karis North that Kaysha Richardson's American Indian identification are contained in the documentation that was supplied to USCIS, the border agents at Sweetgrass MT who unlawfully detained her on her ancestral homelands, Sherrelle Colden and the two FBI agents attached in this email and numerous other federal and state courts as well as law enforcement and courts in Canada.

The CEO has advised Karis North that the level of purported incompetence displayed by multiple parties with respect to these matters is wholly unreasonable. The CEO has advised Karis North that from a risk assessment perspective that the probability of deliberate intent is extremely high.

The CEO has advised Karis North that whenever evidence of Kaysha Richardson's American Indian documentation and the engineering information are presented crimes occur, memory fails or gross incompetence occurs. The CEO has advised Karis North that this is statistically improbably for this to have a 100% occurrence. Rectify this situation as law enforcement in multiple counties have been alerted.

Kind regards,

Dale Richardson, B.TECH, MET, TT (AB), Associate, (SK) Chief Executive Officer DSR Karis North Consulting Inc.
Dover, DE

-----Original Message-----
From: USCIS <USCIS-CaseStatus@dhs.gov>
Sent: November 18, 2022 11:43 AM
To: Dale Richardson [redacted]
Subject: Your recent inquiry (receipt #SRC-21-902-12192)

U.S. Department of Homeland Security
USCIS
1821 Sam Rittenberg Boulevard
Charleston,SC 29407

U.S. Citizenship and Immigration Services Friday, November 18, 2022

Emailed to [redacted]

Dear Valued Applicant/Petitioner:

On 11/04/2022, you or the designated representative shown below, contacted us about your case. Some of the key information given to us at that time was the following:

Person who contacted us:
-- Consulting Inc, Dsr Karis

Caller indicated they are:
-- Authorized Officer or Employee of Petitioning Company or Org

Attorney Name:
-- Information not available

Case type:
-- I140

Filing date:
-- 04/13/2021

Receipt #:
-- SRC-21-902-12192

Referral ID:
WKD3082200391TSC
Beneficiary (if you filed for someone else):
-- Information not available

Your USCIS Account Number (A-number):
-- Information not available

Type of service requested:
-- Outside Normal Processing Times

The status of this service request is:

Thank you for contacting USCIS concerning the above-referenced application. Below is a summary of what we have found and how the issue has been resolved or additional actions required.

What We Have Done

USCIS has reviewed your Service Request. According to USCIS records, we are unable to move forward with your application until the required background checks have been completed. At this time, we are unable to determine when the adjudication of your case will be completed, and no further action is required from you. We apologize for any inconvenience caused by delays in processing.

What You Can Do

In the interim, please remember to renew your employment authorization documents and travel documents within 3-4 months of the expiration date. We hope this information is helpful to you. We appreciate your continued patience.

Online Services:

We offer many online services and tools to help you find the information you need at www.uscis.gov/tools and my.uscis.gov, including:

*Case Status: Sign up for detailed case updates in myUSCIS at my.uscis.gov/account *Check your current case status: www.uscis.gov/casestatus *Check processing times: www.uscis.gov/processingtimes *Ask about your case: www.uscis.gov/e-request *Schedule an appointment: my.uscis.gov/appointment *Ask our virtual assistant Emma: www.uscis.gov/emma

Address Change:

If you move, visit www.uscis.gov/addresschange for information on how to update your address online. Remember to update your address for all your receipt numbers.

For Additional Information:

If you try our online tools and still need help, you can call the USCIS Contact Center at 1-800-375-5283 or 1-800-767-1833 (TDD for the hearing impaired).

To Whom It May Concern-We the People Have the Right and Duty to Cast Out A Tyrannical, Treasonous Government – We Have to Take A Stand, Together-Worldwide

By: *Lisa Aulerich, RN - March 29, 2023*

Preface:

After more than three years of exhaustive researching and painstakingly trying to connect all the "dots," in order to understand the big picture, I must say, I'd never imagined I'd be writing something like ***this***. I'd never imagined that the events of the past three years, and the many decades leading up to now, would, or even ***could***, be ***so completely corrupt and evil*** that we'd be having to speak of things like Genocide and Crimes Against Humanity…Treason…and the infiltration and overthrow of America and many other countries.

In light of the fact that even finding accurate, credible information has been exhausting and made very difficult by way of censorship, woke-isms, craziness, and pseudoscience, I'd like to take a moment to acknowledge & truly Thank the many, to whom I will be giving credit and props, that have given themselves, as I have, to finding and sharing the TRUTH. In tandem with the great research and writings of others, the plethora of information I've compiled has come to make a great deal of sense…and a very clear picture, with a tangible, provable trail of information that is continuously morphing into a gigantic, unstoppable, ever-growing paper-trail that will become Historical Documentation of the Horrendous, Global-wide, Crimes Against Humanity being committed – and God willing, the serving of the Justice these Evil Criminals have so thoroughly earned.

Currently, it is recognized that many of the safe guards and laws meant to protect human rights and hold criminals accountable, have been manipulated and changed, over a long period of time, resulting in the criminals being protected and leaving the citizens -- men, women, and children of the United States, and the world, with no protections, no recourse, and are viewed as less than human and disposable. This is completely unacceptable, and will not stand. The Constitution FOR the United States of America is not merely a meaningless paper document – And Human Beings Are NOT DISPOSABLE, NOR DO WE EXIST TO BE ABUSED, HARMED, OR KILLED AT THE WHIM OF MONSTERS.

This statement, which was supposed to be 'easy,' short, and quick, has turned out to be quite a lengthy project – It has been created to serve as a **Summary,** to demonstrate a **mere fraction** of the decades-long, methodical desecrations of the Constitution, Bill of Rights, Declaration of Independence, Human Rights Protections, Medical Ethics, Education, and Freedoms, by way of **Repugnant** Laws, Acts, Amendments, Bills, etc. to facilitate extensive, premeditated crimes,

thefts, and abuses - committed **by** the many corrupt **U.S. Government officials, and their Agencies/Agents, U.S. Military, CDC, WHO, WEF, FDA, Non-Governmental entities, Physicians, Nurses, and MANY levels of Healthcare, Law Enforcement, Education, Mainstream Media, and many more, all to be named.**

WAR WAS DECLARED ON AMERICA AND THE WORLD, JANUARY 2020 - by many who were given the privilege and trust of being in crucial positions to govern, *protect, teach, and care for the HUMAN BEINGS* of each their cities, towns, provinces, regions, states, and countries.

Katherine Watt, who is a Paralegal and phenomenal writer, has written and shared a breakdown of ***"Legal Walls of the COVID-19 KILL BOX – Militarization of Public health/public health false-front for military campaigns as viewed through the Covid-19 Lens" -***

https://bailiwicknewsarchives.files.wordpress.com/2022/05/2022.02.26-legal-walls-of-the-covid19-kill-box.pdf

"A kill box is defined in Joint Publication (JP) 1-02, Department of Defense Dictionary of Military and Assistance Terms, as: 'A three-dimensional area reference that enables timely, effective coordination and control and facilitates rapid attacks." - It's further described – **"Covid-19 Kill Box** – DoD/WHO intent- *Geographic Terrain: Whole World; *Targets: All People; *Duration: Permanent; *Weapons: **Informational** (fraud); **Psychological** (fear/terrorism); **Chemical, Biological, Radiological, Nuclear/CBRN** (pharmaceuticals/toxins/pathogens) – Source: *Kill Box: Multi-Service Tactics, Techniques and Procedures for Kill Box Employment. (Air Land Sea Application Center, June 2005)"*

"Q: When & How?" –" **When/how were legal frameworks set up, to make the Covid-19 capture, control and kill program function without legal impediment? When and how were military/martial law aspects of the kill box established? *When/how were financial coercion mechanisms set up? *Project has been centuries in the making – globalist central bankers have always pursued complete control of human beings, including population numbers, through banking and military programs. *Kicked into higher gear 1913, Federal Reserve Act, 1930s and 40s, public health."*

"When & How, cont." - **Prior to late 1960s, methods mostly non-pharmaceutical, under pretexts other than 'public health.' Orchestrated armed conflicts, wars, famines. Often loud, messy/bloody and destructive to infrastructure (cities, transit, factories, mines, farms). *Plausible deniability and legal impunity challenging. *From 1969, worked to induce suicide and homicide by fraudulently labeling poisons as medicines, vaccines, prophylactics, and submission to poisoning /self-sterilization as a civic duty. Quieter, cleaner and leaves more 'critical infrastructure' intact. *Plausible deniability and legal impunity easier."*

"Tiered Coercion Cascades - $$$$" – "*Top = Bank for International Settlements/SWIFT. *Bottom = You, your kids, your local elementary school, hospital and workplace… *Actors (men and women all along the chain) are given $$$ incentives to cooperate with the killing program, under the lie that it's for the common good, benevolent, public health-driven, "to save*

*Grandma." I.e. mask, test, isolate, vaxx. *Actors are given $$$ dis-incentives to resist; access to banking, transaction services and job/income will be cut off for non-compliance. *Carrot and Stick: BIS → federal central banks → national governments → state/provincial governments → school districts, universities, hospitals, nursing homes, private employers → You and your family, friends, neighbors, and co-workers."*

***"1969" - ****US Chemical and Biological Warfare Program established by US Congress and President Richard Nixon **(50 USC Ch. 32)** 'Sec. 409. (a) The Secretary of Defense shall submit semiannual reports to the Congress on or before January 31 and on or before July 31 of each year setting forth the amounts spent during the preceding six-month period for research, development, test and evaluation and procurement of all lethal and nonlethal chemical and biological agents. The Secretary shall include in each report a full explanation of each expenditure, including the purpose and the necessity therefor…' *Important translational terms: "protective" "prophylactic" "defensive"= FALSE. *All biologically-active products are intrinsically aggressive, offensive, toxic, lethal. I.e. toxicology, dose dependency, pharmacokinetics, pharmacodynamics, genotoxicity, contraindications, allergies, metabolic disorders, drug-drug interactions, purity/adulterations etc."*

"1983; 1986 – US" - *"1983 Public Health Service Act amendment – Amended **1944 PHSA** to add a '**Public Health Emergencies'** program, granting new powers to Health and Human Services Secretary and establishing a $30 million slush fund = Public Health Emergencies Fund. **42 USC 247d." - ****1986 National Vaccine Program and National Childhood Vaccine Injury Act. Set up and funded **National Vaccine Program**; grant vaccine manufactures legal immunity for injuries and deaths caused by their products; establish and fund a tax revenue/debt-funded National Vaccine Injury Compensation Program. Codified at **42 USC 300aa**. Model for civil liability immunities through Countermeasures Injury Compensation Program."*

"1997 & 1998 – US" - *Laws: *1997 NDAA for FY98; **1997 Food and Drug Administration Modernization Act**; **1998 Omnibus Consolidated and Emergency Supplemental Appropriations Act for FY99. - *Products:** Expanded access to unapproved (CBRN) products = Expanded, pseudo-authorized deployment of prohibited CBRN weapons. After 2003 NDAA for FY04 and 2004 Project Bioshield Act, known as EUA/Emergency Use Authorization Program. - ***Targets:** Prohibitions on forcible CBRN attacks on troops replaced with pseudo-authorized forcible CBRN attacks on ALL AMERICANS. - ***Stockpiles:** Illegal CBRN weapons stockpile reclassified as NATIONAL PHARMCEUTICAL STOCKPILE, later STRATEGIC NATIONAL STOCKPILE, and re-homed from DoD to HHS/CDC."*

***"2000-2002 – US" - ****Setting up program management, war theatre/battlefield parameters, and enemy combatant classifications **- ***2000 Public Health Threats and Emergencies Act. Funding and organizational/management structures for bioterrorism 'countermeasures' research and development. - *2001 Authorization for Use of Military Force – Construed as putting the United States in a permanent state of war [Global War on Terror] with no limitations in time or geographically, and all people construed as presumptive combatants/enemy targets. De facto covert, global martial law. **- ***2001 PATRIOT ACT **- ***2002 Public Health Security and Bioterrorism Preparedness and Response Act **- ***Homeland Security Act."*

"TO WHOM IT MAY CONCERN"

"2005 – WORLD HEALTH ORGANIZATION" - ****WHO International Health Regulations amendments, adopted by World Health Assembly in 2005 **- ***Entered into force June 2007 after ratification by member states. **- ***Called on national governments to strengthen their own domestic laws and fund programs for population surveillance, testing, detention/quarantine, physical control and forced treatment during international outbreaks of communicable diseases. **- ****Pretext:** protecting international trade from disruptions. **- ****True Intent:** establishing legal systems to transfer governance from nation states to one-world government silently, automatically, on trigger of PHEIC. **- ***US Congress, Presidents and Cabinet complied with the WHO demands.**"

"2003-20019 – US" - ****Executive Orders,** directives, proclamations, declarations on public health emergencies, national security threats, continuity of government, homeland security drafted and published through Federal Register. **- ***Congressional PHE **statutes and appropriations**, building up the walls of the Killbox. I.e. PROJECT BIOSHIELD ACT (2004), PREP ACT (2005). Entered into US Code. **- ****Agency regulations** drafted and published through Federal Register, entered into Code of Federal Regulations (CFR). **- ***Guidance reports drafted by DOJ and DHS, circulated to **state, local and tribal governments and law enforcement** for implementation/subordination to federal military during PHEs. **- ***More **"Guidance for Industry"** drafted by FDA/HHS and circulated to academic, pharmaceutical manufacturers, and non-governmental organization (ie BMGF) partners, re: clinical trials and product authorization procedures for BIOLOGICS, VACCINES, GENE THERAPIES, NANOTECH, etc. **- ***More **test runs:** 2003 SARS, 2006 MERS, 2009 H1N1, etc.**"

"2015 – Other Transactions Authority for DoD Prototype Projects" - ****Revealed through Pfizer's April 2022 Motion to Dismiss whistleblower Brook Jackson's False Claims Act case; confirmed by US Gov on October 4, 2022 Statement of Interest/Support for MtD. **- ***Authorizes DoD to use public funds to contract with and/or conscript private pharmaceutical manufacturers to produce and deploy CBRN weapons on general public, with minimal Congressional oversight. **- ***Products classified as "prototypes," not drugs, biologics, or vaccines. **- ***"Prototype" not defined by Congress; defined by DoD in 2018 "addressing certain needs, such as proof of concept, model, and novel application of commercial technologies for defense purposes." **- ***No requirement for valid clinical trials, valid **safety or efficacy** data review, valid FDA authorizations or approvals. **- ***Clinical trials not "material" or "necessary" for DoD payment to contractors.**"

"2020-Present – Covid Big Reveal" - ****WHO –** Public Health Emergency of International Concern (PHEIC) **- ***US-HHS Secretary ALEX AZAR – Public Health Emergency (PHE); PREP ACT Declarations for "MEDICAL COUNTERMEASURES;" FDA pseudo-regulation of 'vaccine' clinical trials, product review, authorization. **- ***Congress/Presidents – Coronaviurs Preparedness and Response Supplemental Appropriations Act; Families First Coronavirus Act, Coronavirus Aid, Relief & Security (CARES) Act, NDAAs, Consolidated Appropriations, etc. **- ***Presidents/Cabinet: Executive Orders etc: Stafford Act, National Emergencies Act, Defense Production Act – directing and controlling manufacturing facilities and weapons production and deployment programs, mandates.**"

"What the Laws Built: Enabling Mechanisms" - ****Set up huge public and private funding streams for military-led biological/chemical/neurological weapons research, development and deployment programs, sold to Congress and public as health emergency programs.* ***- ****Eliminated informed consent in PHE contexts by reclassifying potential* ***carriers of disease *(each Human) as a presumptive* ***national security threat,*** *authorizing incapacitation and destruction of same. War footing.* ***- ****Shield* ***products/weapons*** *form product liability. No safety/efficacy standards.* ***- ****Shield* ***manufacturers, distributors, and 'vaccinators'*** *from civil and criminal liability for their harmful/lethal actions.* ***- ****Shield governments* ***funders, developers, regulators*** *from CBRN WMD/terrorism criminal prosecution by classifying as scheduled toxins, defensive/protective."*

"THINGS GLOBALISTS DON'T LIKE & TRY TO WEAKEN & DESTROY" - ****Federal Constitutions & Charters protecting common law right of People against governments.* ***- ****Conflicting statutory frameworks and international law, i.e., laws criminalizing murder, conspiracy to murder, war crimes, genocide, torture, fraud, extortion, biological weapons of mass destruction, chemical WMD, terrorism.* ***- ****State and Province-level laws protecting common law rights,* ***informed consent*/Nuremberg biomedical ethics principles; product liability, consumer safety; and laws prohibiting murder, fraud, extortion, terrorism.* ***- ****See Oct 2022 report,* ***'State Laws Limiting Public Health Protections: Hazardous for Our Health'****, by Network for Public Health Law.* ***- ****IF THE GLOBALISTS DON'T LIKE IT, DO IT MORE AND HARDER"***

The author begins the last section, ***"Closing thoughts,"*** by saying, ***"****Bas as it is, it could be much, much worse."* I know she is correct in many ways, however, I want to address the millions, worldwide, who have and are suffering immeasurable pain and loss. People, human beings, all of us, have been purposefully and relentlessly targeted, with many injured, and many killed - by biological weapons and psychological warfare. People have lost their friends and their family - mothers, fathers, brothers, sisters, aunts, uncles, grandparents, and their children. This needs to be understood, and there needs to be justice. History has shown us that when a government is permitted to become tyrannical, it will endlessly harm humanity. History has also shown us that this only stops when we, as a collective humanity, stand together and hold it to account, which we must.

The author continues, **"*Many people have been resisting the construction of the kill box all the way along, and their work makes it less tightly built now than it would otherwise be,"*** and she is absolutely right! – *"Many who formerly reinforced the walls of the kill box with their own words and their own labor, have been walking away since Covid.* *******Many who formerly were content to stay inside the box are trying to get out, and those on the outside have better informational tools to help them.* *******A lot of evidence collected already, and* ***every day, new corroborating evidence comes to light****. Esp. "national security" – based resistance to FOIAs and other investigative efforts.* And more and more 'whistleblowers' are coming forward, further solidifying the cases against these monsters. ***"Tipping point will come and criminal prosecutions will start."***

"TO WHOM IT MAY CONCERN"

America and her people have been maliciously attacked, with **Biological Weapons** and **Psychological Warfare**, to name but a couple of the egregious crimes committed and still being committed, **by the CORRUPT in our *own* government, military**, **and their agents, along with the governing & NGO bodies of many other countries, IN LOCKSTEP.**

America's **own** government and military, planned, commissioned, contracted, funded, created, stockpiled, practiced via Table-Top Exercises, and ultimately have unleashed **BIOLOGICAL WEAPONS** upon **AMERICANS** and the **POPULATION of the WORLD** – committing **GENOCIDE, DEMOCIDE, MURDER, CRIMES AGAINST HUMANITY, ATTEMPTED MURDER, PSYCHOLOGICAL & PHYSICAL HARMS against every Man, Woman, and Child on the planet.**

My fellow Americans & Humans – We, the good people of America, and the world, do not wish to have bloodshed or destruction. We do not strive to harm others. We do not see our own lives as more valuable than our fellow good people. We do our best to be honorable, kind, and loving…The "bad guys" need to understand that we good people, who love our families, friends, and humanity – we will not be silent or passive any longer, nor will we surrender our lives, our humanity, our countries or our freedoms.

"The goals and actions of the individual humans working on the global Covid-19 democide project are so brazenly and profoundly evil that good human minds shut down the instant they confront the information. We recoil instinctively — emotionally, cognitively and spiritually — from the extraordinary saturation of evil; we struggle to grasp how it can be so comprehensive in its scope and destructive in its force.

The human perpetrators and their Satanic accomplices have instituted many layers of legal and media control and distortion of information to demoralize and confuse their victims.

But our natural recoiling phenomenon, our fingertip-on-a-hot-stove natural human withdrawal from evil, provides them with powerful additional camouflage for the evil acts, because the mind of the observer will self- add the camouflage of "this is so evil, it can't possibly be true" adding to the layers of legal and media propaganda cover the perpetrators control and impose themselves.

Please pray for the courage to overcome the recoil, so we can fight back better. There are no actions that can be legally classified as crimes or civil torts; there are no medical battery or homicide victims, or plaintiffs; and there are no medical batterers or murderers. Because legally, nothing has been done, and no one has done anything, to anyone else.

The recursive loop can be infinite, as covered countermeasures are developed, authorized and deployed, through HHS Secretary EUA declarations, as treatments for complications from prior countermeasures." – Katherine Watt

The Worldwide Pandemic has resulted in

devastating loss of life due to failure to treat,

separation of family members from loved ones (hospitalized, nursing homes, family gatherings, etc.)

significant loss of personal liberty with lockdowns, restrictions of personal behaviors, unemployment, economic devastation, fear,

the circumvention of the protective mechanisms designed to protect the American people, and

the initiation of the largest experimental study in the history of mankind.

What would you do if you found out the people and establishments you trust are the people causing the problems? What if the people who funded and developed SARS-CoV-2, a biological weapon, have also been in control of how Doctors, Nurses, hospitals, and other healthcare providers have been treating patients? And what if those same people are also responsible for the funding and development of the "vaccines?"

Section One:

Legal Walls - SHORT VERSION

Worldwide Schrodinger's nation-states and people: simultaneously sovereign and not-sovereign, citizens and slaves.

By: **Katherine Watt**
Mar 21, 2022

United States constitutional, civil, and criminal laws have been automatically and secretly preempted by the one-two-three punch of:

1. *World Health Organization's International Health Regulations of 2005, entered into force June 15, 2007;*
2. *US Health and Human Services revisions to 42 CFR 70 regarding public health powers in an "emergency," which subordinate federal government to HHS acting as an agent of WHO, entered into force Feb. 17, 2017; and*
3. *Jan. 30, 2020 WHO Director-General declaration of "public health emergency of international concern."*

The constitutions and charters have been legally suspended since Jan. 30, 2020, but most populations don't realize that yet, because their official leadership (presidents, governors, lawmakers and judges) don't know themselves, or know and aren't saying so.

If the US Constitution and American laws and courts have been privately preempted, they need to be publicly re-established.

A short, bullet-point version of the long-read Legal Walls of the Covid-19 Kill Box,[1] which was posted Feb. 26, 2022, reporting on Attorney Todd Callender's

[1] https://bailiwicknews.substack.com/p/legal-walls-of-the-covid-19-kill?s=w

Jan. 30, 2022 podcast interview: Compulsory Vaccination and Forced Quarantine Camps in Arizona[2]:

- *1992 - Nation-states participating in UN Earth Summit in Rio de Janeiro, Brazil, adopt Agenda 21, later renamed Agenda 30. Goals include reduction of world population, elimination of private property ownership, and elimination of borders and national sovereignty.*
- *1994 - UN participating nation states adopt Framework Convention on Climate Change and International Conference of Population and Development Programme of Action. Plans include reduction of world population, elimination of private property ownership, and elimination of borders and national sovereignty, to be achieved through worldwide propaganda and 'vaccine' campaigns, and changes to/nullification of constitutions, statutes, regulations and court precedents within nation-states.*
- *2001 - Model State Emergency Health Powers Act (MSEHPA), drafted in 2001 under the pretext of addressing bioterrorism in the wake of the 9/11 attacks, by the Center for Law and the Public's Health at Georgetown and Johns Hopkins University, at the request of the US Health and Human Services Department Centers for Disease Control and Prevention (CDC). According to National Vaccine Information Center, the MSEHPA authorizes "state health officials to use the state militia to: take control of all roads leading into and out of cities and states; seize homes, cars, telephones, computers, food, fuel, clothing, firearms and alcoholic beverages for their own use (and not be held liable if these actions result in the destruction of personal property); arrest, imprison and forcibly examine, vaccinate and medicate citizens without consent (and not be held liable if these actions result in your death or injury)." Versions of the MSEHPA were subsequently passed by several state legislatures.*
- *2002 - Congress passes and President Bush signs Homeland Security Act of 2002. [Added to timeline 3/29/22. -KW]*

[2] https://www.americaoutloud.com/compulsory-vaccination-and-forced-quarantine-camps-in-arizona/

- *2003 - SARS outbreak declared by World Health Organization (March 15) leads to US President George W. Bush signing Executive Order (April 4) adding "Severe Acute Respiratory Syndrome" [new name given to lab-modified, weaponized common cold] to the list of communicable diseases, the outbreak of which authorizes Secretary of Health and Human Services to suspend Americans' civil liberties and the US Constitution, and legally eviscerate Congress, state governments and American courts. SARS-2003 was the first test run of the global 'public health'-based population-control framework: acclimating populations to worldwide propaganda, behavior modification and public interference in private doctor-patient relationships.*
- *2004 - Congress passes and US President George W. Bush signs Project Bioshield Act of 2004, making major amendments to Public Health Services Act of 1944. Among other things, the amendments grant new powers to US-HHS secretary and exempt contracted pharmaceutical corporations and others from liability for injury and death caused by pharmaceutical products deployed during a declared public health emergency, under "Emergency Use Authorization." [Added to timeline 3/26/22 - KW]*
- *2005 - US President George W. Bush signs Executive Order adding "influenza," [common flu] to list of communicable diseases, the outbreak of which authorizes Secretary of Health and Human Services to suspend Americans' civil liberties and the US Constitution and legally eviscerate Congress, state governments and American courts.*
- *2005 - World Health Organization opens signing period for revisions to International Health Regulations, adding much stronger global surveillance, behavioral control, travel restriction, and detention powers to prior versions.*
- *2005 - Congress passes and President George W. Bush signs Public Readiness and Emergency Preparedness (PREP) Act, tagged on to the end of a Department of Defense supplemental appropriations and Hurricane Katrina relief act bill. With the Project Bioshield Act of 2004,*

the PREP Act made major amendments to Public Health Services Act of 1944. Among other things, the amendments grant new powers to US-HHS secretary and exempt contracted pharmaceutical corporations and others from liability for injury and death caused by pharmaceutical products deployed during a declared public health emergency, under "Emergency Use Authorization." [Added to timeline 3/26/22. -KW]

- *2006 - Congress passes and President Bush signs Pandemic and All-Hazards Preparedness Act of 2006. More major revisions to 1944 Public Health Service Act. [Added to timeline 3/29/22. -KW]*
- *2006 - MSEHPA state laws had been adopted by Arizona, Florida, Georgia, Hawaii, Maine, Maryland, Minnesota, Missouri, New Hampshire, New Mexico, South Dakota, Tennessee, Utah, and Virginia by 2006. More states have adopted the laws since then.*
- *2007 - World Health Organization collects enough member-state signatures, through World Health Assembly, for revised, strengthened International Health Regulations to enter into legal force. IHR requires participating nation-states to adopt implementing statutes and regulations.*
- *2007 - US Department of Justice and US Centers for Disease Control jointly launch working group to merge public health systems and law enforcement systems in the event of communicable disease outbreaks and other public health crises. The resulting 2008 report A framework for improving cross-sector coordination for emergency preparedness and response: Action Steps for Public Health, Law Enforcement, the Judiciary and Corrections further implemented the Model State Emergency Health Powers Act drafted by Johns Hopkins at CDC's direction.*
- *2009 - World Health Organization declares H1N1 'swine flu' an international pandemic. H1N1 was the second test run of the legal framework, further acclimating populations to worldwide propaganda, behavior modification, public interference in private doctor-patient relationship, and adding heavy-handed rapid-deployment 'vaccination' campaigns.*

- *2013 - US Supreme Court hears Association for Molecular Pathology v. Myriad Genetics. US Department of Justice files amicus brief on side of gene-patent-holding corporation Myriad. Court ruling extends precedent from 1980 Diamond v. Chakrabarty, to find that naturally-occurring DNA is not patentable, but synthetic or modified DNA is patentable, and that a modified living organism, post-modification, becomes the legal property of the patent-holder.*
- *2013 - Moderna obtains US patents for DNA sequence that was later found in SARS-CoV-2 spike protein after the outbreak started in 2019.*
- *2014 - US President Barack Obama signs Executive Order adding suspected but non-clinical/asymptomatic SARS [lab-modified, weaponized common cold] to the list of communicable diseases, the outbreak of which authorizes Secretary of Health and Human Services to suspend Americans' civil liberties and US Constitution, and legally eviscerate Congress, state governments and American courts.*
- *2017 - US Health and Human Services Department quietly — without Congressional debate or ratification, Presidential signature or court review — adopts major revisions to 42 CFR 70, in compliance with 2005 World Health Organization IHR, expanding public health and law enforcement officials' powers to revoke civil liberties and US and state constitutions in the event of a WHO-declared "public health emergency of international concern," automatically subordinating American government to WHO and making US-HHS and US Department of Justice function as agents of World Health Organization with no constitutional or statutory restrictions on their power.*
- *2017 - Johns Hopkins Center for Health Security publishes SPARS Pandemic 2025-2028: A Futuristic Scenario for Public Health Risk Communicators.*
- *2018 - Johns Hopkins/US-HHS Centers for Disease Control publishes Technologies to Address Global Catastrophic Biological Risks report. Includes section on 'self-spreading vaccines.'*

- *2019 - In October, Johns Hopkins, World Economic Forum, and Bill & Melinda Gates Foundation run Event 201, a "tabletop exercise that simulated a series of dramatic, scenario-based facilitated discussions, confronting difficult, true-to-life dilemmas associated with response to a hypothetical, but scientifically plausible, pandemic." Participants included 15 global business, government, and public health leader players. Event 201 resulted in a four-page list of 'recommendations, for how governments and large corporations should prepare laws, public-private partnerships and financial contracts to limit control of key resources, including governing power, during such an emergency, to a handful of players.*
- *2019 - SARS-CoV-2 released from Wuhan Institute of Virology, following development by Chinese and American scientists led by Ralph Baric and Peter Daszak, funded by US National Institutes of Health/National Institute of Allergies and Infectious Diseases, led by Anthony Fauci.*
- *2020 - WHO Director-General declares Covid-19 "public health emergency of international concern," triggering legal subordination of US government to World Health Organization without firing a single bullet.* ***SARS-CoV-2 is the third test run of the legal framework, further acclimating populations to worldwide propaganda, behavior modification and public interference in private doctor-patient relationships. SARS-CoV-2 is the second test run of heavy-handed rapid-deployment 'vaccination' campaigns. SARS-CoV-2 is the first test run of WHO-directed suspension of nation-state governments, citizen civil liberties, federal constitutions and charters.***
- *2020-2022 - US Health and Human Services Secretary and Centers for Disease Control officials control federal government; state health officials control state governments.*
- *President and governors have been reduced to spokespeople for HHS, CDC, FDA and state-level health agencies.*
- *HHS controls and funds national legacy media to blanket population with propaganda and exclude dissenting views and contradictory evidence.*

- *Johns Hopkins controls the database allegedly used by CDC to establish American policy.*
- *US constitution has been suspended. Citizen civil liberties have been suspended.*
- *Congress and state legislatures have been reduced to rubber-stamp funding measures (i.e. CARES Act) drafted and then used for behavioral-control testing, masking and isolation programs; to force hospital and nursing home administrators, doctors and nurses to withhold effective treatments from mildly sick people, on pain of job loss and sequelae; and to forcibly implement death protocols: Remdesivir and ventilators on extremely sick patients, and universal mRNA/DNA injections on healthy people.*
- *Courts have been reduced to peripheral review and temporary reversals of WHO/HHS/state health agency-driven public 'mandates' for procedural violations.*
- *In May and July 2020, President Trump blocked funding to, and started the legal process to withdraw the United States from, the World Health Organization, to be effective July 2021.*
- *In January 2021, newly-installed President Biden reversed Trump's decision, and restarted US funding for the WHO global governance organization.*
- *CDC, FDA, American courts and law enforcement agencies refuse to investigate and review evidence that mass testing, masking and isolation protocols, and mRNA/DNA injection clinical trials were frauds. They refuse to inform the American public that the withholding of early treatment, the government-authorized, deadly, late treatments and the pharmaceutical products injected into millions of Americans are, in combination, maiming and killing Americans in unprecedented numbers. They refuse to withdraw the products from the market, even as the deaths and maimings pile up in life insurance, long-term disability and health insurance claims. And they refuse to hold the criminals accountable for the crimes.*

- *2022 - World Health Organization demands $16 billion from G20 nation-states to fund expanded testing and injections in low- and middle-income countries. World Health Organization launches new round of negotiations to further expand WHO surveillance, behavioral control and detention powers during WHO-declared emergencies, and deepen subordination of national and citizen sovereignty and civil liberties.*

Angry American citizens and elected representatives have been trying to use the criminal and civil courts to stop the governmental and corporate abuse of citizens and hold the perpetrators accountable for the crimes they've already committed, since at least May 7, 2020. Filed cases include:

- *2020/05/07 - Butler et al. v. Wolf et al., 2:20-cv-677-WSS, filed in Pennsylvania under 42 USC §1983 - Civil action for deprivation of rights. District Court found in favor of plaintiffs. Third Circuit Court of Appeals overturned/reversed District Court and then dismissed appeal as moot. Supreme Court refused to hear plaintiffs' appeal, by rejection dated 01/11/22. (Bailiwick synopsis[3] of Pennsylvania cases posted 02/04/22.)*
- *2021/01/08 - US-DOJ/Brook Jackson v. Pfizer et al., 1:21-cv-00008-MJT, filed in Texas under 31 U.S. Code §3729 - False Claims Act. Whistleblower gagged; case postponed indefinitely.*
- *2021/07/21 - America's Frontline Doctors v. Becerra et al., 2:21-cv-00702-CLM, filed in Alabama, under 21 U.S. Code §360bbb - Expanded access to unapproved therapies and diagnostics.*
- *2021/08/21, Ealy, Linthicum and Thatcher v. Redfield, Walensky, Azar et al., 3:22-cv-356-HZ, filed in Oregon, under 18 USC § 3332. Amended petition to impanel special grand jury to investigate federal crimes filed 03/07/22. The petition states there is "probable cause to believe one or all Defendants violated the…Administrative Procedures Act (5 U.S.C. §551 et seq.), the… Paperwork Reduction Act (44 U.S.C. §§ 3501–3521,[4]*

[3] https://bailiwicknews.substack.com/p/how-the-international-health-regulations?s=w
[4] https://bailiwicknews.substack.com/p/how-the-international-health-regulations?s=w

Public Law 96- 511, 94 Stat. 2812 amended to 44 U.S.C. §§ 3501–3521,[5] Public Law 104-13, 109 Stat. 182), and the…Information Quality Act (Section 515 of the Congressional Consolidated Appropriations Act, 2001 Public Law 106-554). In violating these federal laws, the Petitioners allege that crimes have been committed against the citizens of the United States…there is probable cause to believe that the violations of the APA, PRA, and IQA subsequently led to violations of the following federal laws by the Defendants, Major Fraud Against the United States (18 USC §1031), Fraud in Connection with Major Disaster or Emergency Benefits (18 USC §1040), Conspiracy to Defraud the United States (18 USC §371), False Statements Related To Healthcare Matters (USC §1035), False Statements (18 USC §1001), False Information & Hoaxes (18 USC §1038), that can be constituted as acts of Domestic Terrorism (18 USC §2331 - Chapter 113B) and Malfeasance (18 USC §3333), that may have resulted from a Conspiracy Against Rights (18 USC §241) and definitely led to the Deprivation of Rights Under Color of Law (18 USC §242) and may include Subornation of Perjury (18 USC §1622) and Misprision of Felony (18 USC §4) to be determined during the investigation by the grand jury.

- *2022/01/17 - Boteler v. Fauci, Gates, Rockefeller, et al. Filed in Texas Office of Attorney General. No case number assigned.*
- *2022/03/03 - Griner v. Biden et al., 2:22-cv-00149-DAK, filed in Utah under 5th and 14th Amendments to US Constitution.*

These constitutional, civil and criminal cases have been blocked — by the American government and American judges — from moving to discovery, trial and adjudication.

In other words, since Jan. 30, 2020, in the United States and most other countries, government murder of citizens (democide) has been legalized.

[5] https://bailiwicknews.substack.com/p/how-the-international-health-regulations?s=w

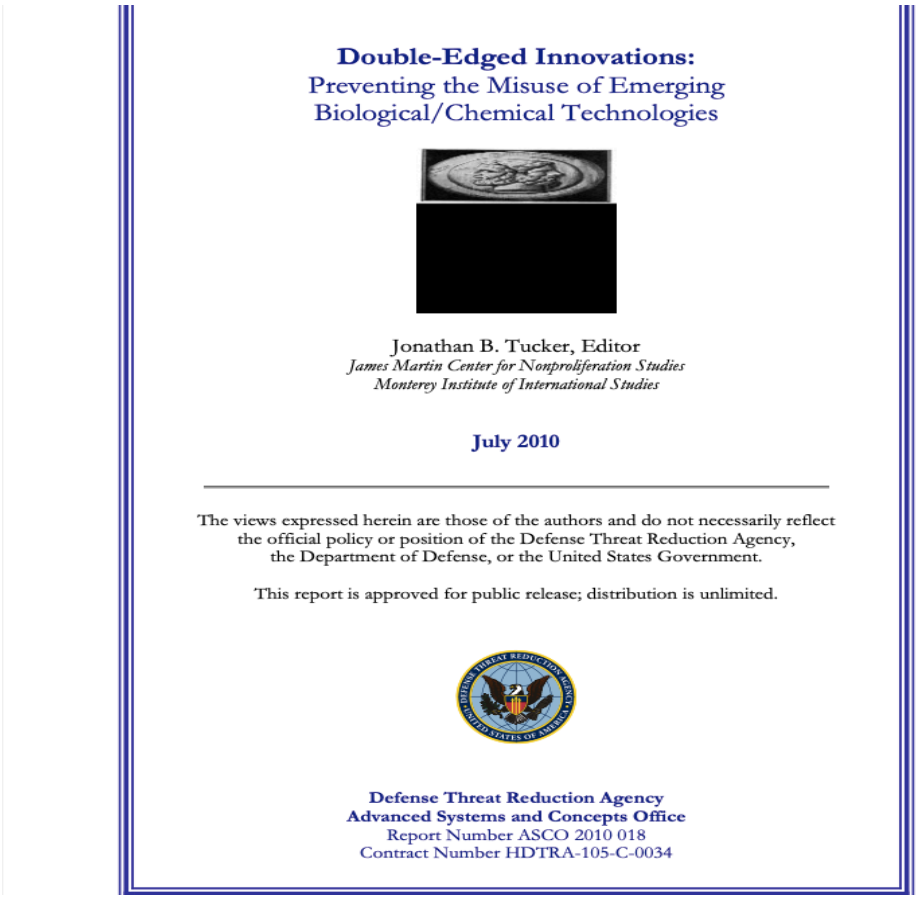
And self-preservation and lifesaving of others have been criminalized.

At some point, it will become clear to a wider segment of the American population that for more than two years now, we've already been ruled over by a global organized crime syndicate. Law enforcement and courts are not going to save us. We have to understand that reality, and we have to respond to it.

Many have not yet come to the realization that bioterrorism is, indeed, a reality, and we are, undeniably, in the midst of a War that was declared against humanity long ago.

Section Two:

A 2010 document titled, "Double-Edged Innovations: Preventing the Misuse of Emerging Biological/Chemical Technologies,"[1] edited by Jonathan B. Tucker – James Martin Center for Nonproliferation Studies, Monterey Institute of International Studies, was obtained, via Freedom of Information Act (FOIA), by John Greenwald Jr. and is one of millions of pages in Greenwald's "Black Vault."



Double-Edged Innovations:
Preventing the Misuse of Emerging
Biological/Chemical Technologies

Jonathan B. Tucker, Editor
James Martin Center for Nonproliferation Studies
Monterey Institute of International Studies

July 2010

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[1] https://documents2.theblackvault.com/documents/ntis/ADA556984.pdf

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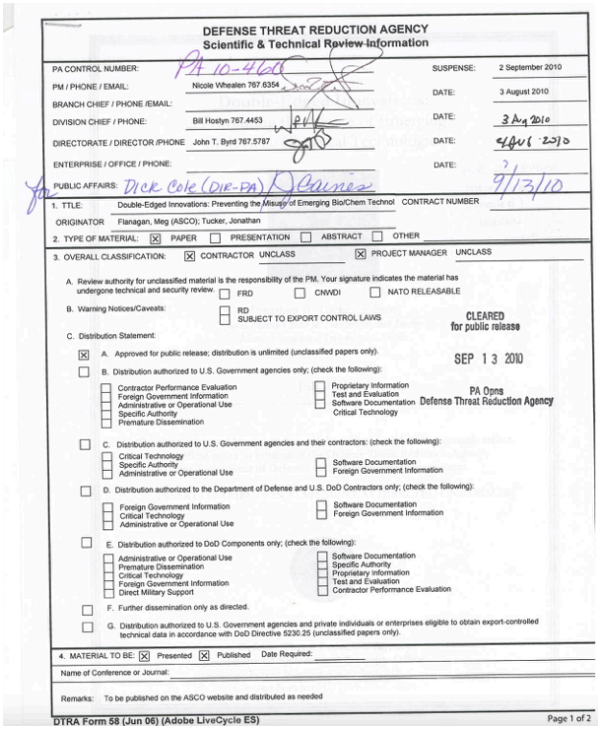

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DTRA Form 58 (Jun 06) (Adobe LiveCycle ES) Page 1 of 2

This document consists of 20 chapters and 2 Appendices. In Chapter 1, the 'Introduction,' by Jonathan B. Tucker, **page 3** is extremely telling:

Chapter 1: Introduction

Jonathan B. Tucker

Several areas of rapid technical innovation, such as ***biotechnology, nanotechnology****, and neuroscience, offer great promise for human health and welfare* ***but could also be exploited for the development and production of biological or chemical weapons.***[1] *Such technologies pose a "dual-use dilemma" because it is difficult to prevent misuse without foregoing beneficial applications.*[2] *Indeed, in many cases the technologies that can do the most good are also capable of the greatest harm. Since the terrorist attacks of September 11, 2001, several developments in the life sciences have raised the political salience and urgency of the dual-use issue.* ***One example is the synthesis from scratch of several pathogenic viruses, including the causative agents of polio, SARS, and the 1918 pandemic strain of influenza.***

In addition to exploring the characteristics of emerging dual-use technologies in the biological and chemical fields, this book has a practical purpose: ***to help policymakers devise the most appropriate and effective governance strategies to minimize the risks of double-edged innovations while preserving their benefits.***

Definitional Issues *- The term "dual-use" has multiple meanings. In the context of defense procurement, it refers to technologies or items of equipment that have both civilian and military applications.[3] Policymakers often promote the transfer of civilian technologies to the defense sector in order to reduce the cost of conventional weapon systems. In a different context, however, dual-use refers to materials, hardware, and knowledge that have peaceful uses but can be exploited for the production of nuclear, chemical, or biological weapons. Certain dual-use chemicals, for example, have legitimate industrial applications but are also precursors for chemical warfare agents.*

"Almost every technology has some potential for misuse: a hammer, for example, can serve as a tool or a murder weapon."

[1] *James B. Petro, Theodore R. Plasse, and Jack A. McNulty, "Biotechnology: Impact on Biological Warfare and Biodefense," Biosecurity and Bioterrorism, vol. 1, no. 3 (September 2003), pp. 161-168; Eileen R. Choffnes, Stanley M. Lemon, and David A. Relman, "A Brave New World in the Life Sciences," Bulletin of the Atomic Scientists, vol. 62, no. 5 (September/October 2006), pp. 28-29; Ronald M. Atlas and Malcolm Dando, "The Dual- Use Dilemma for the Life Sciences: Perspectives, Conundrums, and Global Solutions," Biosecurity and Bioterrorism, vol. 4, no. 3 (2006), pp. 276-286.*

[2] *Parliamentary Office of Science and Technology, "The Dual-Use Dilemma," Postnote, No. 340 (July 2009), p. 1.*

[3] *John A. Alic, Lewis M. Branscomb, Harvey Brooks, Ashton B. Carter, and Gerald Epstein, Beyond Spinoff: Military and Commercial Technologies in a Changing World (Boston: Harvard Business School Press, 1992).*

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DNA technology or "genetic engineering." *Practical applications of genetic engineering, such as ability to synthesize human insulin in bacteria, gave rise to the modern biotechnology industry. Although the first biotechnology firms were spun off from large research universities in the Boston and San Francisco areas, the industry has since spread globally. Several factors have fueled this international expansion, including economic globalization and the growing use of international subcontracting and cooperation agreements.[8] A number of Asian countries, such as China, India, Malaysia, and Singapore, have also championed biotechnology as a key element of their economic development plans.* ***Genetic engineering also has a dark side, however. During the 1980s, the massive Soviet biological warfare program drew on recombinant DNA technology to develop genetically modified pathogens with greater virulence, stability, and antibiotic resistance.***[9]

In recent decades*, the convergence of biology and chemistry has increased the capacity of both fields for good or ill.* ***Since the early 2000s, the advent of synthetic genomics—the ability to synthesize gene-length DNA molecules from off-the-shelf chemicals in the laboratory—has made it possible to construct entire microbial genomes from scratch. Instead of isolating individual genes from one species and splicing them into the genome of another, synthetic biologists are free to design any conceivable genetic sequence on a computer and convert it into a physical strand of DNA that codes for a useful product or function****. A global industry has also emerged to synthesize customized DNA molecules to order for scientific and pharmaceutical- industry clients. Such DNA synthesis firms are not limited to advanced industrial countries such as the United States, Western Europe, and Japan but have also sprung up in China, South America, and the Middle East.*

Today, rapid advances in mapping the human genome (genomics), studying the structure and function of the myriad proteins in living organisms (proteomics), and analyzing the complex biochemical circuits that regulate cellular metabolism (systems biology) are yielding a profound understanding of life at the molecular level. At the same time, technological advances have improved the flexibility, efficiency, and yield of biological and chemical manufacturing processes.

Thanks to the convergence of biology and chemistry, it is becoming possible to produce fine chemicals and drugs in bacteria and to synthesize biological macromolecules such as DNA and peptides (chains of amino acids) by chemical means. Finally, ***the dynamic field of nanobiotechnology has made it possible to engineer nanoparticles that can ferry drugs through the bloodstream to specific tissues, while evading the host immune response. Although all of these innovations promise valuable new medicines and therapies, they could potentially be exploited for biological or chemical warfare purposes.[10] The emerging disciplines of synthetic biology and nanobiotechnology, for example, could lead to a new generation of BW agents that are designed and assembled from scratch.[11]***

Dual-use risks may also emerge unexpectedly from basic or applied scientific research in the life sciences. ***In 2001, for example, a group of Australian researchers developing a contraceptive vaccine to control mouse populations found that inserting a single gene for an immune regulatory protein (interleukin-4) into the mousepox virus rendered this normally mild pathogen highly lethal in mice, even in animals that had been vaccinated against it.[12] This surprising discovery had dual-use implications because the mousepox virus is closely related to the variola (smallpox) virus and the monkeypox virus, both of which can infect humans. It therefore seemed likely that performing the same manipulation on a human poxvirus would increase its virulence and make it resistant to the standard protective vaccine.[13] After debating whether or not to publish their findings, the Australian researchers finally did so in the Journal of Virology in early 2001.***

The security implications of the paper, however, triggered a storm of controversy about whether certain types of scientific information are simply too sensitive to release into the public domain.[14]

Potential Actors

In parallel with the revolution in biology and chemistry, the nature of military conflict has undergone a sea-change since the end of the Cold War. With the easing of the East-West confrontation, the specter of global war between vast armies equipped with tanks and other heavy weapons has receded into history, at least for the time being. The threat of high-intensity warfare has been replaced in the opening years of the 21st century by a variety of low-intensity conflicts, including ethnic and civil wars, insurgency and counterinsurgency campaigns, and "operations other than war" such as peacekeeping and counterterrorism. This sweeping change in the nature of military conflict could create new incentives and opportunities for the hostile exploitation of emerging biological and chemical technologies.[15] Indeed, one consequence of the renewed focus on urban warfare, counterterrorism, and counterinsurgency operations, in which combatants and noncombatants are often intermingled, has been a growing interest on the part of several states in acquiring "non-lethal" or "less-than-lethal" chemical agents.

Whereas riot-control agents (RCAs) such as tear gas have temporary irritating effects on the eyes and skin that dissipate rapidly after the exposure ends, incapacitating agents (such as the opiate anesthetic fentanyl) have persistent effects on the central nervous system and induce a state of disorientation, unconsciousness, euphoria, or depression that lasts for several hours. Some states have explored the possibility of developing novel incapacitating agents based on natural body substances called

bioregulators, many of which are peptides. From 1974 to 1989, the Soviet Union pursued a top-secret program code-named "Bonfire," which involved the development of chemical agents based on peptide bioregulators.[16]

The U.S. Department of Defense has also funded research on so-called "calmative" agents, including some bioactive peptides.[17] *In addition to Russia and the United States, several other countries have reportedly worked on incapacitating agents.*[18]

At least in principle, non-state actors such as terrorist or criminal organizations might seek to misuse emerging dual-use technologies to cause harm. Ever since the 9/11 terrorist attacks and the subsequent anthrax mailings, policymaker concern has focused primarily on biological and chemical terrorism. For reasons of motivation and capability, however, this contingency appears unlikely. Terrorist groups generally lack the financial and technical resources to exploit cutting-edge technologies. In addition, most terrorist groups are conservative in their choice of weapons and tactics, innovating only when forced to do so by the introduction of new countermeasures, such as improved aviation security. Al-Qaeda is an exception to this rule, having openly declared its ambition to acquire unconventional weapons, but the organization's chemical and biological warfare capabilities remain rudimentary.

To date, the only terrorist group that managed to move fairly high up the learning curve was the Aum Shinrikyo cult in Japan. In the early 1990s, Aum recruited biologists and chemists from Japanese universities and amassed vast financial resources from a variety of legitimate and criminal enterprises. Cult leader Shoko Asahara ordered the purchase of costly chemical and biological production equipment and materials, and he put his scientists to work developing and producing anthrax bacteria, botulinum toxin, and sarin nerve agent. Despite these efforts, however, persistent technical problems prevented the cult from achieving its malign objective of staging mass-casualty biological and chemical attacks. Aum inadvertently acquired a harmless vaccine strain of the anthrax bacterium and failed entirely to cultivate botulinum toxin, so that its biological attacks resulted in no injuries or deaths. The cult also was unsuccessful in its attempt to manufacture a multi-ton stockpile of sarin nerve agent. Even so, Aum did manage to stage two attacks involving limited amounts of sarin in Matsumoto in June 1994 and on the Tokyo subway in March 1995, claiming a total of 19 lives and injuring hundreds more.[19]

[8] Christopher Chyba and Alex Greninger, "Biotechnology and Bioterrorism: An Unprecedented World," *Survival,* vol. 46 (2004), pp. 143-162.

[9] John Hart, "The Soviet Biological Weapons Program," in Mark Wheelis, Lajos Rózsa, and Malcolm Dando, eds., *Deadly Cultures: Biological Weapons since 1945* (Cambridge, Mass.: Harvard University Press, 2006), pp. 132-156.

[10] Ralf Trapp, "Advances in Science and Technology and the Chemical Weapons Convention," *Arms Control Today*, vol. 38 (March 2008), http://www.armscontrol.org/act/2008_03/Trapp.

[11] Caitríonia McLeish and Paul Nightingale, "Biosecurity, Bioterrorism and the Governance of Science: The Increasing Convergence of Science and Security Policy," *Research Policy*, vol. 36, no. 10 (December 2007), pp. 1635-1654.

[12] R. J. Jackson, A. J. Ramsay, C. D. Christensen, S. Beaton, D. F. Hall, and I. A. Ramshaw, "Expression of Mouse Interleukin-4 by a Recombinant Ectromelia Virus Suppresses Cyctolytic Lymphocyte Responses and Overcomes Genetic Resistance to Mousepox," *Journal of Virology*, vol. 75, no. 3 (2001), pp. 1205-1210. In retrospect, the unexpected findings of the mousepox experiment could have been predicted because a paper describing the role of interleukin-4 in poxvirus virulence had been published three years earlier in the same journal: G. Bernbridge, et al., "Recombinant Vaccina Virus Coexpressing the F Protein of Respiratory Syncytial Virus (RSV) and Interleukin-4 (IL-4) Does Not Inhibit the Development of RSV-Specific Memory Cytotoxic Lymphocytes, whereas Priming is Diminished in the Presence of High Levels of IL-2 or Gamma Interferon," *Journal of Virology*, vol. 72, no. 5 (1998), pp. 4080-4087

[13] Michael J. Selgelid and Lorna Weir, "The Mousepox Experience," *EMBO Reports*, vol. 11, no. 1 (2010), pp. 18- 24.

[14] National Science Advisory Board for Biosecurity, "Proposed Framework for the Oversight of Dual Use Life Sciences Research: Strategies for Minimizing the Potential Misuse of Research Information," June 2007, available at: http://oba.od.nih.gov/biosecurity/pdf/Framework%20for%20transmittal%200807_Sept07.pdf

[15] Mark Wheelis, "Will the New Biology Lead to New Weapons?" *Arms Control Today*, vol. 34, July/August 2004, pp. 6-13.

[16] Ken Alibek with Stephen Handelman, *Biohazard* (New York: Random House, 1999), pp. 154-155, 163-164.

[17] Joan M. Lakoski, W. Bosseau Murray, and John M. Kenny, *The Advantages and Limitations of Calmatives for Use as a Non-Lethal Technique* (College Park, PA: Pennsylvania State University, College of Medicine and Applied Research Laboratory, October 3, 2000), pp. 39-45.

[18] According to a 2009 study by Michael Crowley of the University of Bradford (UK), research and development in this area has been performed by China, the Czech Republic, France, and the United Kingdom, as well as NATO and the European Defence Agency.

[19] David E. Kaplan, "Aum Shinrikyo (1995)," in Jonathan B. Tucker, ed., *Toxic Terror: Assessing Terrorist Use of Chemical and Biological Weapons* (Cambridge, MA: MIT Press, 2000), pp. 207-226.

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Harm vs. Misuse

When discussing emerging dual-use technologies, ***it is important to distinguish between "harm" and "misuse." Harm encompasses a broad range of negative consequences, including fatal and non-fatal casualties, permanent disability, psychological trauma, social chaos, economic damage, and the incitement of fear. Whereas the capacity to cause harm is an inherent characteristic of a dual-use technology or material, misuse is a function both of the intent of the individual actor and prevailing social norms. From a legal standpoint, misuse is an action that violates an existing national or international law. Humanitarian law, for example, prohibits certain types of weapons because they are indiscriminate and likely to kill civilians, treacherous or insidious by nature, or have effects on the human body that cause unnecessary suffering.***

The legal definition of misuse has changed over the course of history in response to the evolution of international law, which follows and embodies trends in global behavioral norms. Thus, the relationship between harm and misuse is different today than it was in the past.[20] *During World War I, for example, the Germans believed that the use of biological weapons against humans was immoral but that biological attacks targeting horses and other draft animals were legitimate.* ***The development, production, and stockpiling of germ weapons by states was legal until the entry into force of the Biological Weapons Convention (BWC) in 1975. Although the United States unilaterally abandoned its offensive biological warfare program in 1969, the Soviet Union and then Russia secretly continued its program into the early 1990s in flagrant violation of the BWC. Similarly, before the Chemical Weapons Convention (CWC) went into effect in 1997, it was legal for states to develop, produce, and stockpile chemical arms, although the first use of such weapons in war was prohibited by the 1925 Geneva Protocol.***

Today, certain categories of weapons, such as small arms and conventional explosives, are considered legitimate, while chemical and biological weapons (and more recently landmines) have come to be viewed as morally unacceptable. Additional categories of armament, such as incendiary weapons, exist in a legal gray area in which certain applications (in the vicinity of civilians) have been banned by treaty, while others (against military targets) are still permitted. Although most arms control treaties apply only to states that join them voluntarily, the 1925 Geneva Protocol has acquired the status of customary international law, making it binding on all states whether or not they have signed and ratified it.

Three Misuse Scenarios

Three scenarios for the misuse of emerging biological and chemical technologies can be envisioned. First, dual-use technologies may facilitate or accelerate the production of standard biological or chemical warfare agents. ***Examples include the application of synthetic genomics to construct dangerous viruses from scratch, circumventing the physical access controls on pathogens of bioterrorism concern.***

Second, dual-use technologies could help to identify or develop novel biological or chemical warfare agents that either have traditional lethal or incapacitating effects or entirely new ones. For example, it may eventually become possible to synthesize artificial pathogens or toxins that are resistant to standard medical countermeasures. Advances in neuroscience and psychopharmacology could also lead to the development of drugs that can affect human memory, cognition, and emotion in highly specific ways and on a mass scale. Beyond the potential military applications, rulers of autocratic or totalitarian states might seek to employ such agents against their own populations to repress dissent and control unrest. Along these lines, molecular biologist Matthew Meselson of Harvard University has warned, "As our ability to modify fundamental life processes continues its rapid advance, we will be able not only to devise additional ways to destroy life but will also be able to manipulate it—including the processes of cognition, development, reproduction, and inheritance. A world in which these capabilities are widely employed for hostile purposes would be a world in which the very nature of conflict had radically changed. Therein could lie unprecedented opportunities for violence, coercion, repression, or subjugation."[21]

Third, dual-use biological/chemical technologies may lead to harmful applications that undermine international legal norms. Although the CWC bans all use of toxic chemicals on the battlefield, Article II, paragraph 9 (d) permits the development, production, and use of chemical agents for "law enforcement including domestic riot control."[22] Because the treaty does not specify the types and quantities of toxic chemicals that may be used for this purpose, however, the law-enforcement exemption creates a potential loophole. If the exemption is interpreted broadly to cover chemicals more potent than riot-control agents, it could lead to the development and deployment of a new generation of psychochemical weapons and undermine the ban on chemical warfare. For example, military scientists might exploit advances in psychopharmacology to develop novel incapacitants and calmatives for counterterrorism and peacekeeping operations, blurring the distinction in the treaty between permitted activities (domestic riot control) and prohibited ones (warfare). A 2007 report by the International Union of Pure and Applied Chemistry (IUPAC) warned that the large-scale development and production of incapacitating agents for law-enforcement purposes could have the effect of undermining the basic prohibitions of the treaty because the agents would actually be weaponized and thus hard to distinguish from military weapons.[23] British chemical weapons analyst Julian Perry Robinson has also warned, ***"A regime that allows weaponization of one form of toxicity but not another cannot, under the circumstances, be stable."[24]***

Hostile applications of chemical and biological agents might conceivably move beyond warfare to include systematic violations of human rights and international humanitarian law. Examples include the use of "mind-control" drugs to aid in coercive interrogation, or the possible development of "ethnic weapons"—engineered biological agents that can selectively target and harm certain ethnic or racial groups based on their genetic makeup. Although genetic warfare is not a practical option today, information from ongoing research into the human genome might eventually be exploited for this purpose. If and when it becomes possible to distinguish DNA sequences between ethnic groups and target them in a way produces a harmful outcome, a genetic weapon will become possible.[25]

The potential dark side of the revolution in the life sciences has been recognized for many years. According to a 1999 report by the British Medical Association titled Biotechnology, Weapons and Humanity:

[W]e are concerned that the emerging sciences of genetic engineering and biotechnology may be developed for malign purposes. The social and ethical safeguards which may prevent the escalation of conflict and weapons development therefore need to be discussed urgently. This report hopes to stimulate debate and raise civic awareness of the potential abuse of biotechnology and the important steps we can take to minimize the risk of the development of biological weapons.[26]

In 2003, an expert panel chaired by biology professor Gerald Fink of the Massachusetts Institute of Technology (M.I.T.), convened under the auspices of the U.S. National Academy of Sciences, produced a landmark study titled Biotechnology Research in an Age of Terrorism. This report identified seven types of experiments in the fields of microbiology and molecular biology that entail potential dual-use risks and warrant a security review before being approved and funded.[27] *In response to the Fink Committee report, the U.S. government established a federal advisory committee called the National Science Advisory Board for Biosecurity (NSABB) with the mandate to develop a policy framework for the oversight of "dual-use research of concern" in the life sciences.*[28]

Other prominent organizations have issued warnings about the potential misuse of advances in the life sciences, such as synthetic genomics and the mapping of the human genome. In 2004, the World Health Organization warned, "[E]very major new technology of the past has come to be intensively exploited, not only for peaceful purposes but also for hostile ones. Prevention of the hostile exploitation of biotechnology therefore rises above the security interests of individual states and poses a challenge to humanity generally."[29] *That same year, the International Committee of the Red Cross (ICRC) launched an Appeal on Biotechnology, Weapons and Humanity, which urged governments, the scientific and medical communities, the military, industry, and civil society "to strengthen their commitment to the international humanitarian law norms which prohibit the hostile uses of biological agents and to work together to subject potentially dangerous biotechnology to effective controls."*[30]

Proposals to ban emerging dual-use biological or chemical technologies outright are not realistic because doing so would sacrifice major benefits for public health, agriculture, and economic development. A better approach is to design policies that prevent misuse for harmful purposes while permitting legitimate applications. To date, however, a rigorous methodology for assessing the dual-use risk of emerging technologies and designing tailored governance strategies has yet to be widely adopted. Absent such a framework, dual-use technologies and expertise have continued to proliferate, increasing the risk that they could fall into the hands of states, groups, or individuals with malign intent.

[20] *Jonathan B. Tucker, "From Arms Race to Abolition: The Evolving Norm Against Chemical and Biological Warfare," in Sidney D. Drell, Abraham D. Sofaer, and George D. Wilson, eds., The New Terror: Facing the Threat of Biological and Chemical Weapons (Stanford, CA: Hoover Institution Press, 1999), pp. 159-226.*

[21] *Matthew S. Meselson, "Averting the Hostile Exploitation of Biotechnology," CBW Conventions Bulletin, June 2000, pp. 1-2.*

[22] *Alan M. Pearson, Marie Isabelle Chevrier, and Mark Wheelis, eds., Incapacitating Biochemical Weapons: Promise or Peril? (Lanham, MD: Lexington Books, 2007).*

[23] *Balali-Mood, Steyn, Sydnes, and Trapp, "Impact of Scientific Developments on the Chemical Weapons Convention (IUPAC Technical Report)," p. 185.*

[24] *Julian P. Perry Robinson, "Ensuring that OPCW implementation of the CWC definition of chemical weapons remains fit for purpose," discussion paper for the 54th Pugwash CBW Workshop, The Second CWC Review Conference and After (Noordwijk, The Netherlands, April 5-6, 2008).*

[25] *British Medical Association, Biotechnology, Weapons and Humanity (Amsterdam: Harwood Academic Publishers, 1999), p. 60.*

[26] *British Medical Association, Biotechnology, Weapons and Humanity (Amsterdam: Harwood Academic Publishers, 1999), p. 1.*

[27] *National Research Council, Biotechnology Research in an Age of Terrorism (Washington, DC: National Academies Press, 2004).*

[28] *The NSABB's definition of "dual-use research of concern" (DURC) is as follows: "Research that, based on current understanding, can be reasonably anticipated to provide knowledge, products, or technologies that could be directly misapplied by others to pose a threat to public health and safety, agricultural crops and other plants, animals, the environment, or materiel." NSABB, Proposed Framework for the Oversight of Dual-Use Life Sciences Research: Strategies for Minimizing the Potential Misuse of Research Information (June 2007), available online at: http://www.oba.od.nih.gov/biosecurity/biosecurity_documents.html*

[29] *World Health Organization, Public Health Response to Biological and Chemical Weapons: WHO Guidance, 2nd edition (Geneva, Switzerland: WHO, 2004), Executive Summary.*

The rest of this nearly prophetic document certainly warrants discussion and sharing, however, in the interest of this writing being a 'summary' I will reserve addressing this document in its entirety for a later date. I do recommend that everyone, legal and civilian, refer to this document regarding the egregious crimes committed by many bad actors in America, and World Wide.

There is one very particular reference in this document that warrants immediate attention, in its entirety, as seen below, **written by Ralph Baric in Feb 2006**, titled **"Synthetic Viral Genomics: Risk and Benefits for Science and Society,"** which can be found on **Page 22 of the document above, Part 1 Ch. 2, Reference 23.**

Synthetic Viral Genomics: Risks and Benefits for Science and Society

Ralph S. Baric – University of North Carolina at Chapel Hill

I. Introduction

A. Viruses and Biological Warfare

Viral disease outbreaks have long inspired fear in human populations. Highly pathogenic infectious disease has shaped world history, primarily by impacting the outcome of wars and other global conflicts and precipitating human movement. Historic accounts have documented the catastrophic consequences and human suffering associated with widespread viral outbreaks like smallpox virus, yellow fever virus, measles virus, human immunodeficiency virus (HIV), the severe acute respiratory syndrome coronavirus (SARS-CoV), the 1918 influenza virus and others (51). News accounts and film have reinforced the serious threat posed by the emergence of new viral diseases as well as the catastrophic consequences of intentional release of highly

pathogenic viruses in human populations. As illustrated by the SARS epidemic and the continuing evolution of the H5N1 avian influenza, global and national infectious disease outbreaks can overwhelm disaster medical response networks and medical facilities, disrupt global economies, and paralyze health and medical services by targeting health care workers and medical staff (21). This review focuses on viruses of humans, animals and plants that are viewed as potential weapons of mass disruption to human populations, critical plant and animal food sources, and national economies; and will consider whether and how the availability of synthetic genomics technologies will change this landscape.

Biological warfare (BW) agents are microorganisms or toxins that are intended to kill, injure or incapacitate the enemy, elicit fear and devastate national economies. Because small amounts of microorganisms might cause high numbers of casualties, they are classified as weapons of mass destruction. A number of naturally occurring viruses have potential uses as BW agents, although the availability of these agents is oftentimes limited. This report discusses the potential use of recombinant and synthetic DNAs to resurrect recombinant BW viruses de novo and the potential for altering the pathogenic properties of viruses for nefarious purposes. Examples of weaponized viruses include Variola major (Smallpox), Venezuelan equine encephalitis virus (VEE), and the filoviruses Marburg and Ebola viruses, with the classic example being the use of smallpox virus-contaminated blankets against indigenous North American Indian populations (76). It is now clear that many viruses possess properties consistent with applications in biological warfare and bioterrorism.

B. Properties of Select BW Agents

Traditionally, biological warfare concerns have focused on a relatively limited, select group of naturally occurring pathogens viewed as having a set of desirable characteristics: 1) highly pathogenic, 2) readily available, 3) easily produced, 4) weaponizable, 5) stable, 6) infectious at a low dose, 7) easily transmissible, and 8) inspiring of fear (32). Viruses of concern include pathogens that replicate and produce serious morbidity and mortality in humans to pathogens that target farm animals and plants of economic importance. Historically, weaponization of agents has been constrained by availability, the biological characteristics specified within the genome of these organisms, the ability to replicate and produce large quantities of the material, and by the lack of appropriate associated technologies. Culture (growth) and containment conditions for most of the virus agents of concern have been solved and are readily available in the literature. Natural hosts and reservoirs of many viral agents have been identified, providing a means of readily acquiring these pathogens in nature, although this is not always the case. Most recently, full length genome sequences have been solved for many important human, animal and plant pathogens, providing a genetic template for understanding the molecular mechanisms of pathogenesis and replication. Structural studies have identified contact points between the virus and the host receptors needed for docking and entry, providing the means to humanize animal pathogens (42). With the advent of synthetic biology, recombinant DNA technology, reverse genetic approaches (i.e. the development of molecular clones of infectious genomes) and the identification of virulence alleles, not only are new avenues available for obtaining these pathogens, but more ominously, tools exist for simultaneously modifying the genomes for increased virulence, immunogenicity, transmissibility, host range and pathogenesis (22, 59). Moreover, these approaches can be used to molecularly resurrect extinct human and

animal pathogens, like the 1918 human influenza virus (81).

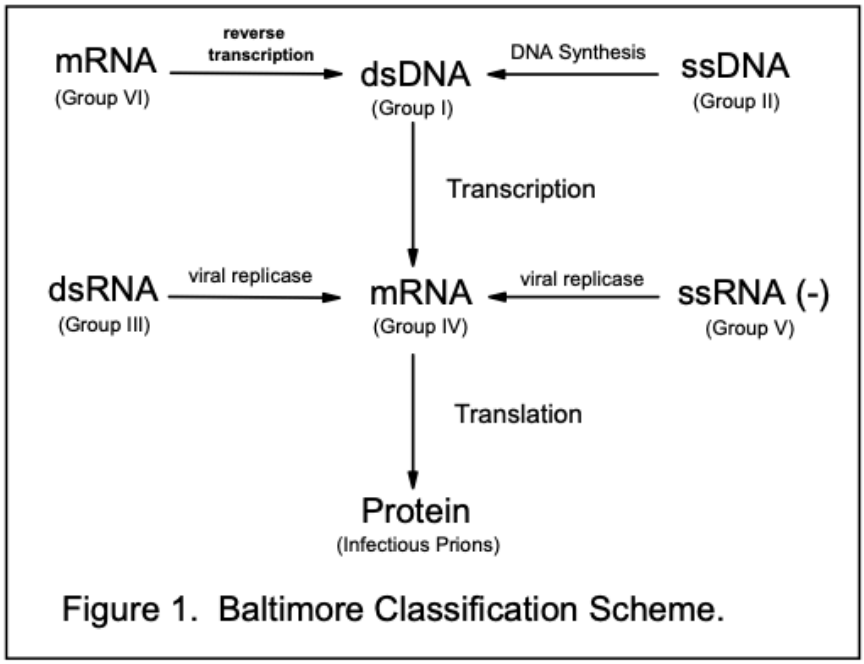
National biodefense strategies are focused on threats posed by this small group of plant, animal and human pathogens that occur in nature. However, counterterrorism think-tanks anticipate that these particular threats will ameliorate over the next decade because of medical countermeasures (e.g., drugs, vaccines, diagnostics), coupled with a limited set of pathogens that include all of the biological warfare characteristics. More important, the anticipated long-term threat in biological warfare is in recognizing and designing countermeasures to protect against genetically modified and designer pathogens, made possible by newly emerging technologies in recombinant DNA, synthetic biology, reverse genetics and directed evolution (59). How will synthetic genomics effect future biological weapons development? What are the risks and benefits of these new technologies and how serious a threat do they pose for human health and the global economy? This paper builds upon earlier work and seeks to review the methodologies in isolating recombinant viruses in vitro and the application of these methods globally to biological warfare and biodefense (27).

II. Virus Classification and Reverse Genetic Approaches

A. Overview of Virus Classification and Reverse Genetics

From the genome, all viruses must generate a positive strand mRNA that is translated into proteins essential for genome replication and the assembly and formation of progeny virions. Depending upon the nature of the genome, all viruses can be clustered into seven fundamentally different groups, which utilize different strategies to synthesize mRNA from the input genome, a scheme called the Baltimore Classification (Figure 1).[1] *Because virus infectivity is dependent upon the ability to transcribe mRNAs, reverse genetic strategies are designed to insure expression of critical viral mRNAs that encode essential replicase proteins needed to "boot" (initiate) genome infectivity and initiate genome replication.*

Figure 1. Baltimore Classification Scheme.



Group I viruses *include the double-stranded DNA (dsDNA) viruses, like the Herpes viruses and Poxviruses which replicate in the nucleus or cytoplasm, respectively. The dsDNA viruses use cellular and/or virally-encoded transcriptase components to mediate expression of viral mRNAs. Poxviruses for instance require one or more viral proteins to initiate mRNA transcription and boot infectivity of the viral genome. Hence, smallpox virus genomes are not infectious unless the appropriate suite of viral proteins is provided in trans (in addition to the genome itself). In contrast, the Herpes virus genome is infectious in the absence of any viral proteins as cellular transcriptase machinery induces expression of early mRNAs and proteins that regulate expression of other viral genes and replication. Using vaccinia (poxvirus) as a model, an approach to successfully initiate/jump start and boot the infectivity of poxviruses has been developed, providing a template strategy for the family (11, 24). Herpes virus genomes are infectious in the absence of additional viral factors.*

Group II viruses *encode single stranded DNA genomes which must be used as templates for the synthesis of a dsDNA before transcription and translation of mRNAs can occur within cells. At this time, group II BW agents have not been identified.*

The ***Group III viruses*** *contain double stranded RNA viruses, like reoviruses. Reovirus genomes consist of complementary positive and negative strands of RNA that are bound by hydrogen bonding, wrapped within a multistructured icosahedral core that is essential for virus transcription. The virion structure contains the necessary proteins required for initiating mRNA synthesis. Unlike many of the single-stranded RNA viruses, the dsRNA virus genomes are not infectious in isolation and the components necessary for booting genome infectivity remain unresolved.*

Group IV viruses *contain a single-stranded positive polarity RNA genome and include the flaviviruses, alphaviruses, picornaviruses (including poliovirus),* ***coronaviruses (including the SARS virus)****, caliciviruses and others. Upon entry into cells, positive strand RNA genomes are immediately recognized by host translational machinery and the genome is translated into a suite of viral proteins, including the replicase proteins and RNA-dependent RNA polymerase which is necessary for initiating the viral replication cycle. Consequently, genome infectivity usually does require viral proteins or transcripts provided in trans to boot genome infectivity, although some exceptions have been reported (13).*

Group V viruses *contain a single-stranded negative polarity RNA genome and include filoviruses (Ebola/Marburg), myxoviruses (influenza), and paramyxoviruses (Hendra). Group V genomes come in two different flavors, segmented (e.g., myxoviruses) or nonsegmented (e.g., paramyxoviruses and filoviruses). In either case, the genome is not infectious because it is complementary in sequence (anti-sense); it is the opposite of the positive strand that specifies amino acids and thus cannot be translated directly into any of the critical viral structural or replicase proteins needed for producing infectious virions. Negative strand RNA genomes are encapsidated into a complex ribonucleoprotein structure (RNP) usually composed of several virally encoded replicase proteins (e.g., polymerase complex proteins, support proteins, trans-acting proteins) that are incorporated into the virion during assembly. Together, these compose a functional replication complex. Upon entry, these RNP complexes immediately transcribe the genome negative strand RNA into mRNA that can be translated into the viral proteins.*

Consequently, genome infectivity requires the presence of full length RNA and a set of virally encoded replicase proteins that function as a transcriptional complex to express mRNAs. If mRNAs encoding the transcripton complex are provided in trans, ***group V genomes*** *become infectious and virus will be successfully recovered.*

Group VI viruses*, retroviruses (including HIV) and lentiviruses, encode single stranded positive polarity RNA genomes, but virions encode a reverse transcriptase enzyme to convert the mRNA genome into a complementary DNA (cDNA) which serves as template for dsDNA synthesis. Following the synthesis of dsDNA, group VI viruses use cellular transcriptional and translational machinery to express viral transcripts encoding structural and nonstructural proteins. At this time, the group VI viruses do not include any BW agents.*

B. Infectious Genomes, Molecular Clones and Reverse Genetics

The basic concepts central to understanding virus reverse genetics and molecular clones are summarized in ***Figures 1 and 2****.*

The central idea is that the virion is an extracellular vehicle that transfers the viral genome (e.g., RNA or DNA genomes) between susceptible cells and protects the nucleic acid genome from degradation in the environment ***(Figure 2, Part A)****.*

Following entry, the viral genome is programmed to initiate a series of events that result in the production of a replicase complex that transcribes mRNA and replicates the genome. As discussed in the previous section, nucleic acid structure and organization determines the

pathway of events needed to express mRNA and initiate virus gene expression and infection.

Not all viruses, however, require virion attachment and entry to mediate a productive infection. In these cases, viral genomes can be isolated from virions and transfected directly into susceptible host's cells. If the genome is infectious, viral RNAs and proteins will be expressed allowing for the production and release of progeny virions ***(Figure 2, Part B)****.*

Classic examples of viruses with "infectious genomes" include the herpes viruses, polioviruses, alphaviruses, polyomaviruses, and flaviviruses which are classified among the Group I, II or IV viruses. However, not all viral genomes are infectious upon delivery into cells. Viruses with Group III or V genomes have never been demonstrated to be infectious upon genome delivery into susceptible cells. Some Group I (poxviruses) and group IV virus genomes (e.g., norovirus, a causative agent of non-bacterial gastroenteritis, or "cruise ship disease" and the coronavirus infectious bronchitis virus) are not infectious upon delivery into susceptible cells (13).

In these instances, genome infectivity requires the presence of specific cofactors to initiate viral replication. These cofactors typically represent one or more proteins that encode essential replicase proteins or encapsidate the genome into an RNP structure necessary for initiating transcription of mRNA from the genome. In this example, infectious bronchitis virus genome infectivity requires the nucleocapsid protein in trans while the components needed to boot norovirus genome infectivity remain unknown (13).

Infectious Virion Particle

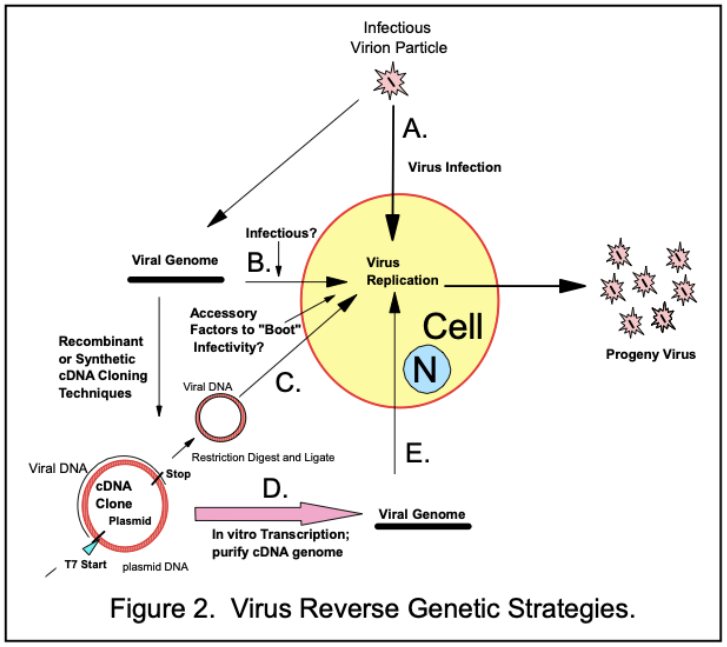


Figure 2. Virus Reverse Genetic Strategies.

In the late 1970's, a simple observation altered the course of virology research globally. Using a small dsDNA virus genome as a model (the Group I polyomavirus SV40) researchers cloned the viral genome into a bacterial plasmid

and propagated the viral genome in bacteria. Upon isolation of the plasmid DNA from bacteria, restriction enzymes were used to excise the dsDNA viral genome, re-ligate the genome in vitro into a circular dsDNA and rescue virus following transfection of the genome into susceptible cells (Figure 2, Part C)(28). (Many advances in biotechnology have been, and continue to be, dependent upon this restrict-isolate-ligate technique, or variations of it.)

Shortly thereafter, full length cDNAs of positive strand RNA genomes were isolated following reverse transcription, the cDNAs cloned and propagated in bacterial plasmids, and following introduction of full-length DNA into eukaryotic cells, recombinant viruses were rescued from the transfected cultures, although very inefficiently. The major problems with this approach were the difficulty in generating the appropriate termini, accurate genome sequence, problems in nuclear transport of the full-length RNA genome, and splicing of the viral genomic RNA.

To rectify the efficiency problems**, bacteriophage promoters (T7, SP6, T3) were introduced upstream of the cloned viral cDNAs, allowing in vitro transcription of full-length RNA copies of the viral genome using the appropriate phage RNA polymerase, nucleotide triphosphates, and other constituents (Figure 2, Part D). The full length RNAs, near exact replicas of the viral genome, were highly infectious upon transfection of susceptible host cells (Figure 2, Part E)(2, 65, 66). The ability to clone full length copies of viral genomes **allowed for ease of manipulation of the genome and the introduction of specific mutations.

Recovered viruses contained the introduced mutations that were encoded within the full-length cDNA clones, providing a ready means of performing detailed genetic analyses of virus replication and pathogenesis.

*As noted earlier not all viral genomes are infectious, **complicating the development of full length cDNAs and the recovery of recombinant viruses.** Isolated dsRNA genomes from Group V negative sense RNA viruses are not infectious because the genome sequence cannot be translated directly into a functional replicase complex needed to transcribe the incoming genomic RNA. As Group V virions contain a replicase protein complex essential for transcription, genome infectivity requires that cells be cotransfected with plasmids that express the genomic RNA and plasmids expressing transcripts that encode the replicase protein complex are needed for genome infectivity (Figure 3a).*

For most group V viruses, both genome negative and positive sense RNA infectivity can be booted using this approach with most investigators expressing full length plus (coding) strands from the initial transcript. The plus strands are transcribed to full length negative strands, which are used to express the appropriate set of mRNA encoding the full component of positive and negative strand RNAs.

Using this approach Schnell et al. successfully recovered the first recombinant negative stranded RNA virus, rabies virus, from a cloned cDNA, ushering in an era of Group V virus reverse genetics (68, 82).

*These findings were rapidly extended to other linear negative stranded RNAs like **paramyxoviruses** and then to segmented negative strand RNA viruses like **influenza and other myxoviruses**, and then **select bunyaviruses and arenaviruses***

(20). Reverse genetic strategies for group V viruses with segmented genomes are most complex as multiple plasmids expressing copies of each genome segment must be simultaneously delivered to a cell along with the support plasmids encoding the transcriptase complex.

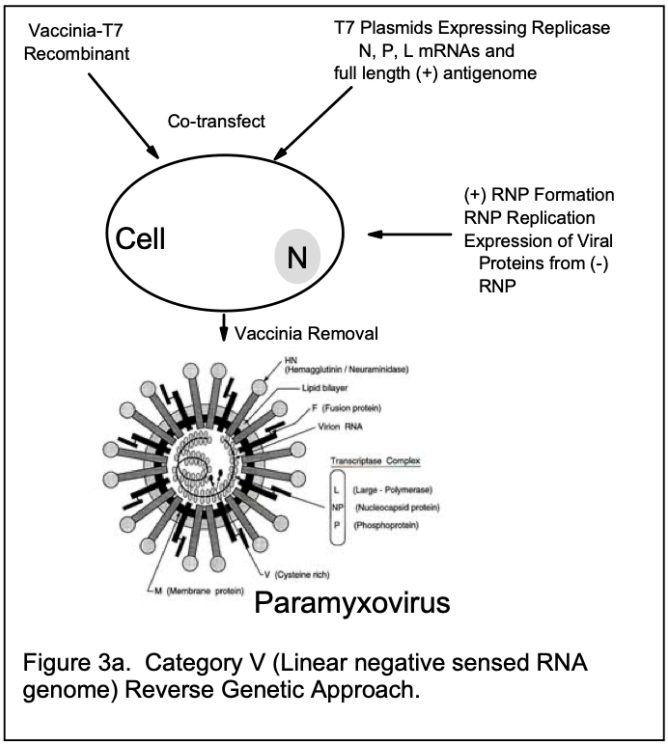


Figure 3a. Category V (Linear negative sensed RNA genome) Reverse Genetic Approach.

Figure 3a. Category V (Linear negative sensed RNA genome) Reverse Genetic Approach.

*Most of the RNA viruses have relatively small genomes (under approximately 20,000 bases or base-pairs). Viruses with extremely large genomes (over 100,000 base-pairs, e.g., herpes viruses, poxviruses, or ~20,000-30,000 base pairs, e.g., **coronaviruses**, filoviruses) have presented additional obstacles in the development of stable molecular clones.*

***Generation of infectious clones for viruses** encoding large RNA or DNA genomes is complicated by the need for sequence accuracy (e.g., **incorrect sequences usually contain lethal mutations**), the lack of suitable cloning vectors that stably maintain large DNA inserts, large genome size, and that the genomes oftentimes encode regions that are toxic or unstable in bacteria.*

In poxviruses for example, the ~200 kilobase pair (kbp) genome has covalently closed hairpin ends (structures formed by the DNA itself) that are required for genome replication and virion encoded products are also essential for booting genome infectivity (24). Herpes virus genomes are ~150 kbp in size.

One solution was to stably clone large viral genomes as bacterial artificial chromosome (BAC)

vectors. BAC vectors are based on the replication of F factor in E.coli, which is tightly controlled and allows stable maintenance of large, complex DNA fragments up to 600 kbp and both herpesvirus and poxvirus genomes can be stably maintained in BAC vectors (17, 24). For Herpes viruses, BAC shuttle vector sequences encoding a marker are inserted by homologous recombination into the genome. Circular viral DNA, which is generated during the Herpes virus replication cycle, is purified from infected cells (so-called Hirt prep) and introduced in bacterial cells, which essentially generates a large plasmid containing the Herpes virus genome (49).

As herpesvirus genomes are infectious, the BAC DNA sequences are rapidly lost after delivery to a suitable host cell, along with some surrounding viral sequences, because they are dispensable for viral DNA replication (71). Using the Cre/lox system (another basic tool of molecular biology), a self-recombining full length pseudorabies virus BAC was developed where the full-length genome is automatically removed from the BAC sequences by the expression of Cre recombinase after transfection, reducing the potential for random deletions of viral sequences (72) (Figure 3b). Recombinant Herpes virus genomes that have been successfully cloned include mouse cytomegalovirus, herpes simplex virus 1, human cytomegalovirus, pseudorabies virus, and Kaposi's Sarcoma virus (11, 24, 49).

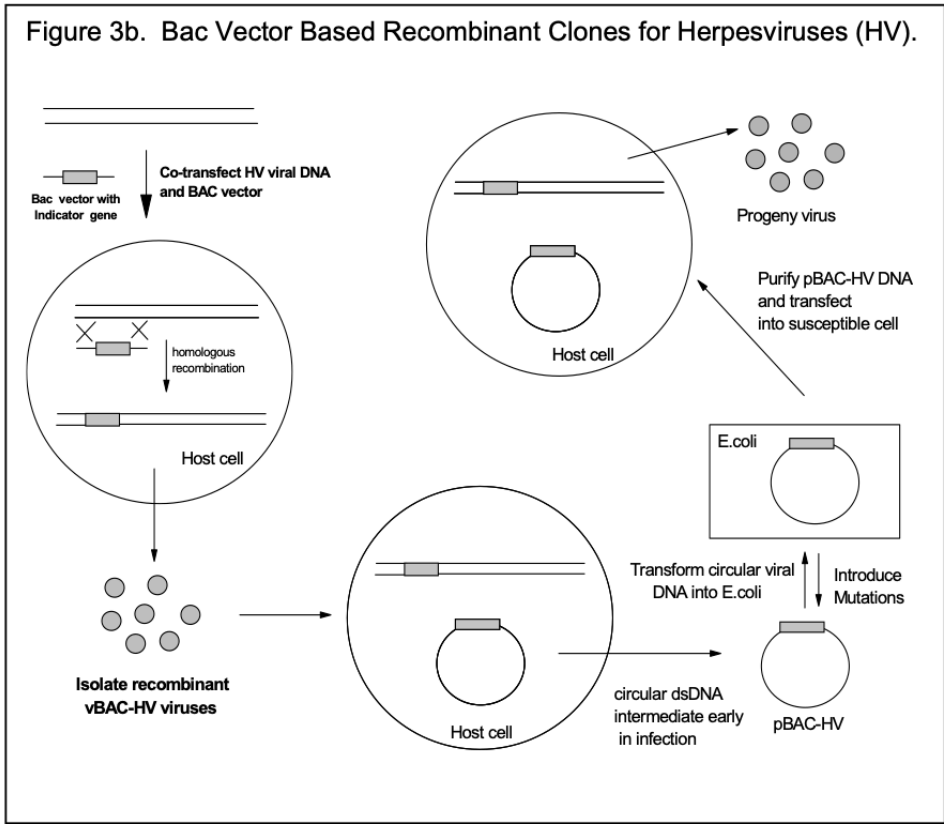


Figure 3b. Bac Vector Based Recombinant Clones for Herpesviruses (HV).

Poxvirus genome structure and replication modes make the development of an infectious

poxvirus molecular clone an order of magnitude more difficult than generation of the Herpes virus molecular clone. Poxvirus genomes replicate in the cytoplasm and require several viral proteins to mediate mRNA transcription and a unique DNA-dependent RNA polymerase that are normally contained within the virion to initiate virus infection.

Consequently, purified poxvirus DNA is not infectious. In addition, the linear dsDNA genome has closed hairpins at each end of the genome that are essential for DNA replication.

How were these problems solved? *As described with Herpes viruses, a mini BAC encoding a marker called green fluorescent protein (GFP) was recombined into the thymidine kinase gene encoded in the vaccinia genome (a model for smallpox). Recombinant viruses harboring the BAC cassette were identified by GFP expression.*

However, transformation of Vaccinia BAC vectors into E.coli required conversion of the linear genome with covalently closed ends into a closed circular DNA. To accomplish this, Domi and Moss blocked late viral gene expression knowing that this favored additional recombination events that allowed head to tail concatamers of full length genome from which monomeric recombinant genome in a covalently closed circle would result, a favored genome orientation for insertion into E.coli. Transfection of VAC-BAC DNA into mammalian cells, previously infected with a helper fowl pox virus whose replication is defective in mammalian cells, allowed recovery of recombinant vaccinia virus (23, 24).

Although BACs are remarkably stable, both poxviruses and herpesvirus genomes contain repetitive sequence elements and other sequences that might be unstable with passage as no biological selective pressure exists to maintain virus genome sequence fidelity in E. coli.

Because the large genome size makes it impractical to sequence the entire genome, in vivo pathogenesis studies have been used to demonstrate equivalent levels of pathogenicity and virulence between wildtype and recombinant herpes viruses, further supporting the hypothesis that BAC recombinant genomes are highly stable in E.coli (12). The availability of large dsDNA genomes in BACs provides two major opportunities for future research, the construction of expression vectors for treatment of human diseases and the mutagenesis of the viral genome for understanding gene function, virus replication and pathogenesis.

A second solution to large genome instability was developed using coronaviruses as models. Seven contiguous cDNA clones that spanned the 31.5 kilobase (kb) coronavirus genome (e.g., mouse hepatitis virus [MHV] or SARS-CoV) were amplified, isolated and ligated into standard polymerase chain reaction (PCR) cloning vectors (PCR is one technique used to amplify sequences that are rare and/or not available in large quantities, to provide enough material for subsequent experiments). The ends of the cDNAs were engineered with unique junctions, generated by class IIS restriction endonucleases like BglI or Esp3I. These enzymes leave asymmetric ends, which are designed to seamlessly reproduce the exact virus sequence, allow directional assembly of adjacent cDNA subclones, and direct the production of an intact full length cDNA construct of ~31.5 Kb in length. With enzymes like Esp3I, interconnecting restriction site junctions can be located at the ends of each cDNA and systematically removed during the assembly of the complete full-length cDNA product (Figure 4a). The availability of

a contiguous set of DNAs containing unique interconnecting junctions provides for the systematic assembly of large DNA molecules greater than 1,000,000 base pairs by in vitro ligation (85).

In the case of coronaviruses (Figure 4b), full length cDNAs are assembled that contain a T7 transcription site at the 5' end of the genome. RNA transcripts driven from the full length cDNA were infectious upon delivery into susceptible cells (85, 87). Alternatively, coronavirus genomes can be stably cloned into BAC vectors. T7 or eukaryotic promoters encoded upstream of the viral sequences allow for the synthesis of full-length RNA genome sequences, which are infectious upon introduction into cells (1).

Seamless assembly (also called No See'm Sites (85)) cascades have been used to assemble full length cDNAs of the coronaviruses mouse hepatitis virus, transmissible gastroenteritis virus, infectious bronchitis virus and the SARS-CoV (85,86,87).

Because certain type IIS restriction endonucleases (e.g., Esp3I, AarI, Sap1) recognize asymmetric binding sites and leave asymmetric ends, these enzymes can be used to create the unique interconnecting junctions, which can be subsequently removed from the final assembly product allowing for the seamless reconstruction of an exact sequence (Figure 4b). This approach avoids the introduction of nucleotide changes that are normally associated with building a full-length cDNA product of a viral genome.

These non-palindrome restriction sites *will also provide other novel recombinant DNA applications. For example, by PCR it will be possible to insert Esp3I or a related non-palindromic restriction site at any given nucleotide in a viral genome and use the variable domain for simple and rapid site-specific mutagenesis.*

By orientating the restriction sites as "No See'm", the sites are removed during reassembly, leaving only the desired mutation in the final DNA product. The dual properties of strand specificity and a variable end overhang that can be tailored to match any sequence allow for Esp3I sites to be engineered as "universal connectors" that can be joined with any other four nucleotide restriction site overhangs (e.g. EcoRI, PstX1, BamH1).

Alternatively, "No See'm" sites can be used to insert foreign genes into viral, eukaryotic, or microbial genome or vector, simultaneously removing all evidence

of the restriction sites that were used in the recombinant DNA manipulation.

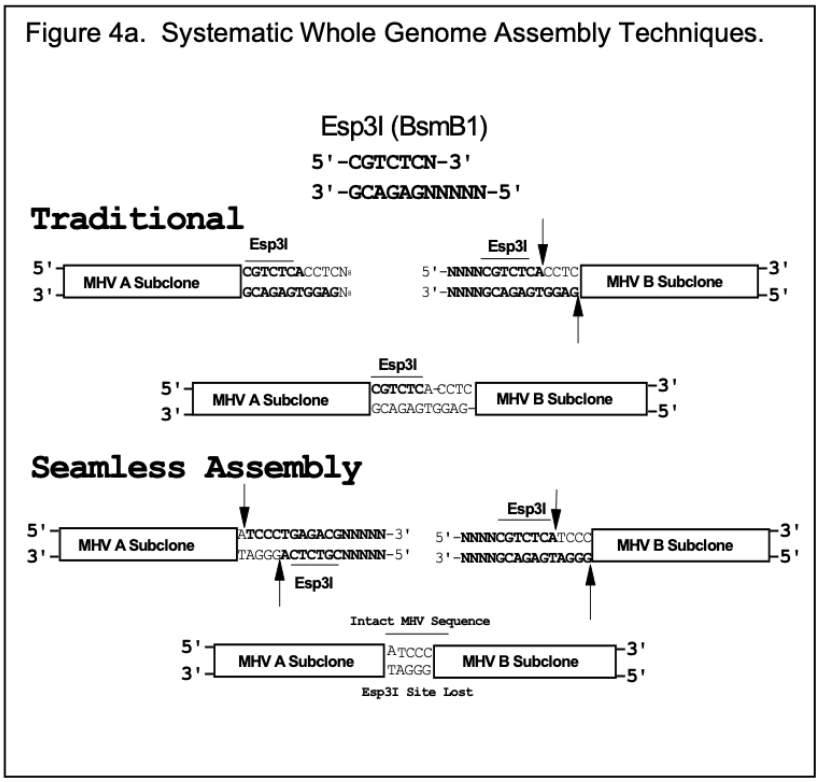


Figure 4a. Systematic Whole Genome Assembly Techniques.

Finally, these restriction sites allow for the rapid assembly of small synthetically produced cDNAs into progressively larger cDNAs. For example, enzymes like AarI recognize a 7 nucleotide recognition sequence and leave a four nucleotide asymmetric end (usually). In a random DNA sequence, this site occurs every 8,000 base pairs or so. Using a recursive assembly cascade $2^{\sim 256}$ different 8Kb cDNAs can be assembled into extremely large >1,000,000 bp DNAs designed in BACs for stable maintenance in bacteria (85-87).

At this time, well developed molecular clones have been constructed with representative viruses in most of the known virus families; specifically, the Groups I-IV genomes, thus providing a systematic approach for generating molecular clones of many Categories I, III, and IV BW agents. In addition, recent advances in synthetic biology provides promise for reconstructing microbial genomes de novo (15), as has been elegantly demonstrated with the recovery of recombinant poliovirus and ΦX174 viruses (14, 73) from synthetically derived genomes. In these instances, accurate sequences were available for de novo synthesis, as functional molecular clones had existed for both viruses for many years.

Consequently, the combination of proof of principle, available templates for

genome construction and sequence information make it likely that any virus genome could be synthetically reconstructed from sequence databases, assuming that the sequence is correct (18, 36).

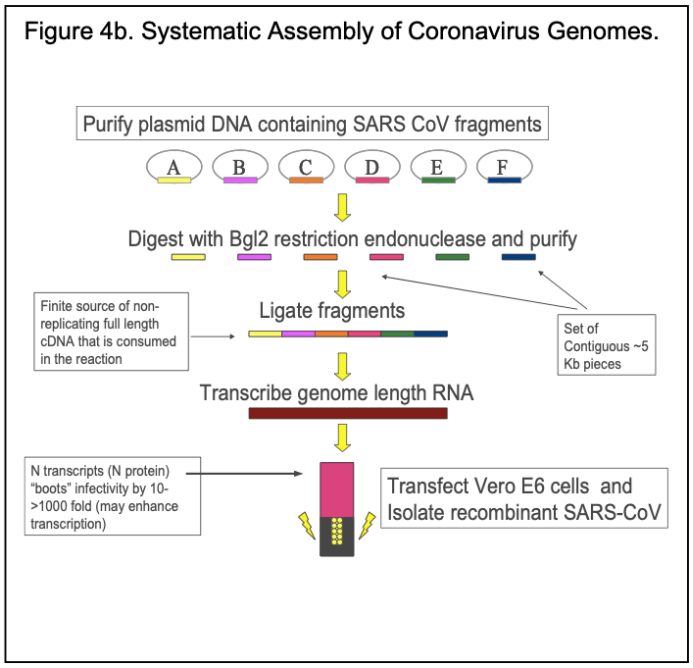


Figure 4b. Systematic Assembly of Coronavirus Genomes.

C. Review of Controlled Viruses

The United States Department of Health and Human Services (HHS), the Centers for Disease Control and Prevention (CDC), and the United States Department of Agriculture (USDA) have identified bacteria, viruses, toxins, rickettsia, and fungi that pose a potential threat to public health or welfare. Some of these organisms are considered Select Agents and High Consequence Livestock Pathogens and all research laboratories with access to these agents must submits names and fingerprints of all individuals listed as working with Select Agents to the Department of Justice. ***Every person who enters a laboratory containing registered Select Agents must have FBI security clearance or be accompanied and monitored by such a cleared person.***

This includes visitors and employees performing routine cleaning, maintenance, and repairs. The CDC oversees and regulates all laboratories that possess or use select agents and the transfer of select agents and toxins that may be used to threaten the overall public health and safety as published in the ***Federal Register on March 18, 2005 (42 C.F.R. Part 73, 7 C.F.R. Part 331, and 9 C.F.R. Part 121) (Appendix 1)****.*

In addition, the Department of Commerce regulates the transport of many pathogenic agents deemed important for maintaining the public health or that could impact the economic vitality of

the US.

Many, but not all, overlap with the Select Agent List and the USDA High Consequence Livestock Pathogens. Finally, the ***National Institutes of Health*** *has assembled a list of high priority agents for biodefense research, and provides special funding for basic science, vaccines and therapeutics. Select agents are typically grouped among category A agents that pose the most serious perceived risk to national security while category B agents include many important food and waterborne agents that are easy to disseminate.* ***The category C agents are emerging pathogens of special concern or pathogens that could be engineered for mass dissemination.***

All work with microbes that might be harmful to workers or to the environment is conducted according to a variety of regulations directed to the general area of "biosafety and containment". What is important here is that biosafety and containment are accomplished through a suite of institutional and worker actions and these activities are referred to by the level of containment achieved. "Biosafety Level 1" (BSL-1) is the least stringent containment; BSL-4 the most stringent (used for the deadliest pathogens for which there are no treatments).

Priority viruses will be discussed according to the Baltimore Classification Scheme.

The key columns in these tables are the last three, ***Nature, Laboratory, and Synthetic.***

A ***"yes" in Nature*** *indicates that the virus* ***can*** *be found in nature (thus,* ***all viruses on the list except smallpox, 1918 H1N1 and 1957 H2N2 influenza, and the 2002-2003 strain of SARS CoV)****.*

A "yes" under Laboratory means that the virus can be found in some kind of lab, be it a research laboratory, a reference laboratory (e.g., the American Type Culture Collection), a commercial laboratory, etc. This is virtually all viruses on the list ***(smallpox is closely guarded, and the recently resurrected 1918 influenza virus, at least for now, is in a limited number of known laboratories).***

Synthetic captures two characteristics*.*

First*, is it possible to synthetically construct a virus of a specific family? These are indicated in bold, and takes into account both whether a synthetic DNA construct can supply the appropriate nucleic acid, and if enough is known about the other aspects of booting the system that it is imaginable that a synthetic approach would be taken.*

Second*, for the individual viruses on the list, the range of possibility takes into account both whether it is possible to construct, and whether this would be an attractive possibility compared to finding it in nature, or trying to steal it from a laboratory (in the case of a bioterrorist). So for example, even though foot-and-mouth disease virus is easy to find in nature and highly contagious, it is also easy enough to synthesize that bioterrorists hoping to hide their tracks may prefer the synthetic route.*

The Group I agents include the dsDNA viruses contained among the Herpes viruses, Poxviruses

and Asfarviruses (Figure 5). Herpes viruses contain linear dsDNA genomes of about 150,000 base pairs and include Herpes B virus (primate) and Malignant catarrhal fever viruses (swine), both of which are readily available in nature and for which culture conditions have been detailed in the literature. Herpes virus genomes are infectious; full length molecular clones and recombinant viruses have been described for several human and animal herpes viruses (72). Although molecular clones for Herpes B virus and Malignant catarrhal fever virus have not been described, a significant body of literature provides a theoretical template and guide for the development of similar constructs with a high probability of success.

Poxvirus genomes range in size from 150,000 to 196,000 base pairs in length and the genomes are ***not infectious*** *upon introduction into susceptible cells. However, poxvirus genome infectivity can be booted by coinfection with an avian poxvirus that has an abortive infection in mammalian cell lines, but provides essential proteins for transcribing the poxvirus genome. A molecular clone has been described for vaccinia virus, providing a theoretical template for guiding similar technology with other members in the family (23, 24).*

Poxviruses like ***Variola major and Variola minor (smallpox) and monkey pox viruses*** *are select agents. Although most poxviruses can be readily found in nature and/or are maintained in laboratory settings,* ***Variola major and minor are notable exceptions that are thought extinct in the wild. These two viruses are maintained in high security facilities in the US and Russia and it is very unlikely that these agents can be recovered from natural settings.***

Figure 5. Category I Restricted Agents.

Family	Virus	Genome Size	Infectious/ Boot Infectivity	HMS-CDC	NIH A-C	Commerce	USDA	Nature	Laboratory	Synthetic
Category I	dsDNA Genome	Linear	Mixed/yes							Yes but Difficult
Herpesviruses			Yes/Yes							
	Herpes B Virus	156,789		Y				Yes	Yes	Unlikely
	Malignant catarrhal fever virus	156,789					Y	Yes	Yes	Unlikely
Poxviruses			No/Yes*							Yes, but Difficult
	Variola Major	186,103-185,578	No/No	Y	A	Y		No	No* (Limited)	Plausible but difficult
	Variola Minor	186,986	No/No	Y	A	Y		No	No* (Limited)	Plausible, but difficult
	Monkey pox	196,858	No/No	Y	A	Y		Yes	Yes	Unlikely
	White pox				A	Y		Yes	Yes	Unlikely
	Goat pox	149,999	No/No		A		Y	Yes	Yes	Unlikely
	Sheep pox virus	149,955	No/No		A		Y	Yes	Yes	Unlikely
	Camel pox		No/No		A		Y	Yes	Yes	Unlikely
	Lumpy skin disease virus	150,773	No/No				Y	Yes	Yes	Unlikely
Asfarvirus	African swine fever virus	170,101	No/No				Y	Yes	Yes	Possible

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*Variola samples are maintained in two laboratories worldwide.

Figure 5. Category I Restricted Agents.

**Variola samples are maintained in two laboratories worldwide.*

Group III priority agents *include the reoviruses African horse sickness and exotic bluetongue strains, which primarily infect domesticated animals (Figure 6). Reovirus genomes contain ten segments of double stranded RNA and these genomes are not infectious in isolation.*

Reproducible schemes to boot reovirus genome infectivity have recently been developed by the Dermody laboratory. Although these viruses are available in nature and in laboratory settings, the inability to initiate genome infectivity had hampered the successful development of reverse genetic approaches and molecular clones.

Consequently, the use of natural or laboratory acquired strains represented the most likely approach to acquiring these agents for bioterrorism purposes, although the reovirus reverse genetic system should be an appropriate template for developing molecular clones to other reoviruses..

Family Category III	Virus	Genome	Infectious/ Boot Infectivity	HM S/C DC	NIH A-C	Commerce	USDA	Nature	Laboratory	Synthetic
REOVIRUS	**dsRNA Segmented Genome (10)**	**Linear, dsRNA**	**No, Yes*,**							**Not Possible**
Reovirus	African horse sickness virus	1-3965; 6-1566 2-3203; 7-1179 3-2792; 8-1166 4-1978; 9-1169 5-1566; 10-798	**No, No**				**Y**	**Yes**	**Yes**	Unlikely
	Bluetongue virus (exotic)	1-3944; 6-1658 2-2953; 7-1156 3-2772; 8-1125 4-1981; 9-1049 5-1769; 10-822	**No, No**				**Y**	**Yes**	**Yes**	Unlikely

Figure 6. Category III Priority Viruses.

Figure 6. Category III Priority Viruses.

Group IV viruses *contain single stranded positive polarity RNA genomes and include agents in the calicivirus, potyvirus, picornavirus, alphavirus, flavivirus and* ***coronavirus families*** ***(Figure 7).***

These viruses have dramatically different virion structures, genome organizations, and transmission modes between hosts; they target different tissues, display different virulence and pathogenic determinants and use different replication strategies upon entry into susceptible cells. Common features, however, include an infectious positive sense RNA genome and relatively straightforward and well developed approaches for obtaining full length cDNA clones from which recombinant viruses can be easily isolated in culture. In most cases these viruses replicate efficiently in culture, and animal models of disease exist, allowing for easy cultivation, maintenance, and testing in a laboratory setting. A general rule of thumb is that the BSL2 positive single stranded RNA (e.g., human noroviruses) pathogens are more readily accessible than the ***BSL3 pathogens (e.g., SARS-CoV****, VEE, etc.) in laboratory settings. BSL4 pathogens*

are the least accessible. Poliovirus, which is targeted for eradication, is not included among any of the high priority pathogen lists but has been synthetically reconstructed by the Wimmer laboratory.

*Wild poliovirus is eradicated from the North and South American continents and Europe, but is still prevalent in Africa and parts of Asia. The virus has been present in many laboratories throughout the world, although current efforts are aimed at limiting the availability of wildtype stocks to a few locations in the US. Should eradication efforts prove successful, poliovirus should almost certainly be listed as a high priority agent. In the future, poliovirus might represent a likely candidate for synthetic reconstruction efforts because whole genome sequence is available, genome size is small and could be purchased for about $10,000 US dollars, and synthetic polioviruses have been reconstructed in the laboratory**. This possibility, however, may be several decades away and is also dependent upon an end to global vaccination efforts.***

***The Group IV viruses** are also very abundant in nature and many are present in laboratories. **The main exception is the human 2002-3 SARS-CoV epidemic strain that is likely extinct in the wild, but is present in many laboratories throughout the world. Globally, most SARS-CoV isolates were late phase epidemic strains because many early and zoonotic (animal) isolates were never successfully cultured and not distributed outside of China (19, 41). Molecular clones have been described for prototype animal caliciviruses, picoronaviruses, potyviruses, alphaviruses, flaviviruses and coronaviruses, including many, but not all of the agents of interest in Figure 7.** At this time, molecular clones for human noroviruses have not been successfully developed.*

***Group V viruses** contain a single stranded negative polarity RNA genome and include members of the bunyavirus, arenavirus, filovirus, paramyxovirus, rhabdovirus, and influenza virus families (Figure 8, below). As with the group IV viruses, these viruses differ dramatically in virion structure, genome organization, transmission modes, human disease severity, virulence and pathogenesis. In general, negative stranded RNA genomes are either nonsegmented and linear (e.g., paramyxovirus, filoviruses, rhabdovirus) or segmented and linear (e.g., bunyavirus, arenavirus, myxoviruses). These viruses are readily found in nature either in human and animal hosts or vectors; all of which have been well described in the literature. Most are easily cultured in laboratory settings.*

Again, laboratory availability diminishes with increased BSL ratings, so that BSL3 (e.g., 1918 influenza, Rift Valley Fever) and BSL4 (e.g., Ebola, Marburg, Lassa Fever, etc.) are the least available.

The exceptions include the 1918 Spanish influenza virus and H2N2 (1957 pandemic) Asian influenza viruses which are likely extinct in the wild. The 1918 Spanish influenza was resurrected from a molecular clone and is only available in a few laboratories worldwide, but the H2N2 strain is more prevalent in laboratory settings (81). Both viruses are likely capable of producing pandemic disease, as the Spanish Flu H1N1 and Asian H2N2 strains have not circulated in human populations for over 90 and 50 years, respectively. Reverse genetics

systems for prototypic members of each virus family have been reported in the literature although success is more rare with arenaviruses and bunyaviruses. In contrast, well documented reverse genetic systems have been described for paramyxoviruses, rhabdoviruses, myxoviruses, and filoviruses providing clear templates for reconstruction of synthetic viruses.

Figure 7. Category IV Priority Viruses.

Family	Virus	Genome	Infectivity/Boot Infection	HMS/CDC	NIH A-C	Commerce	USDA	Nature	Laboratory	Synthetic
Category IV	**Positive Polarity RNA Genomes**	**Linear**	**Yes/Yes**							
Calicivirus		**Linear**	**Yes/Yes**							**Possible**
	Human Norovirus	7,654	No/No		B			Yes	Yes	Not yet
	Vesicular exanthema virus	8284	?/No				Y	Yes	Yes	Plausible
	Rabbit Hemorrhagic virus	7467	?/No				Y	Yes	Yes	Unlikely
Picornavirus			**Yes/Yes**							**Yes**
	HAV	7,478	Yes/Yes		B			Yes	Yes	Unlikely
	Foot&Mouth Virus	8,161	Yes/Yes				Y	Yes	Yes	Plausible
	Poliovirus*	7,440	Yes/Yes					Yes	Yes	Done
	Swine vesicular disease virus	7,401	Yes/Yes				Y	Yes	Yes	Plausible
Potyvirus	**ssRNA + polarity**									**Yes**
	Plum Pox Virus	9741	Yes/Yes	Yes		Yes		Yes	Yes	Unlikely
Alphavirus			**Yes/Yes**							**Yes**
	VEE	11,444	Yes,Yes	Y	B	Y	Y	Yes	Yes	Plausible
	EEE	11,675	Yes,Yes	Y	B	Y	Y	Yes	Yes	Unlikely
	WEE	11,484	Yes,Yes		B	Y		Yes	Yes	Unlikely
	Chikungunya virus	11,826	Yes			Y		Yes	Yes	Unlikely
Flavivirus			**Yes/Yes**							**Yes**
	Dengue	10,735	Yes/Yes		A	Y		Yes	Yes	Unlikely
	West Nile	10,962	Yes/Yes		B			Yes	Yes	Unlikely
	Yellow Fever	100,862	Yes/Yes		C	Y		Yes	Yes	Unlikely
	Wesselsbron disease virus	NA	Yes/No				Y	Yes	Yes	Unlikely
	Japanese Encephalitis Virus	10,976	Yes/Yes		B		Y	Yes	Yes	Unlikely
	Central European TB-encephalitis	10,978-10,871	Yes/Yes	Y	C	?		Yes	Yes	Unlikely
	Far Eastern TB encephalitis virus	NA	Yes/Yes	Y	C	?		Yes	Yes	Unlikely
	Louping ill virus	10,871	No/No				Y	Yes	Yes	**Unlikely**
	Kyasanur Forest virus	Incomplete	Yes/No	Y	B	?		Yes	Yes	Unlikely
	Omsk HF Virus	10,787	Yes/No	Y	C	?		Yes	Yes	Unlikely
	Russian Spring/Summer Encephalitis virus		Yes/No	Y	C	Y		Yes	Yes	Unlikely
	Classical swine fever virus	12,301	Yes/				Y	Yes	Yes	Unlikely
Coronavirus	SARS-CoV	29,751	**Yes/Yes**		C			No[1]	Yes	**Yes**

[1]The 2002-2003 epidemic strain is likely extinct in the wild; many zoonotic forms exist; *poliovirus is not included in any priority pathogen lists.

Figure 7. Category IV Priority Viruses.

[1]The 2002-2003 epidemic strain is likely extinct in the wild; many zoonotic forms exist; *poliovirus is not included in any priority pathogen lists. Notice that SARS-COV IS NOT FOUND IN NATURE AS OF 2007

Although many Category I-V agents are available in laboratory settings, serial passage of virus in cell culture oftentimes selects for "culture adapted" variants that display altered or reduced pathogenicity in the original host. In fact, serial passage in cell culture or alternative animal model has been used to attenuate virus pathogenesis and was used as a method to develop live attenuated poliovirus and measles virus vaccines. Consequently, laboratory strains may not reproduce wildtype virus pathogenicity and virulence when reintroduced into the natural host and may not represent the preferred source of starting material for bioterrorism applications.

[[**MA15, AS JUST ONE EXAMPLE, WAS SERIAL PASSAGED UNTIL ITS VIROLENCE BECAME INCREASE, P15, LATER TO BE CALLED MA15, BECAME 100% LETHAL TO MICE AFTER 15 PASSAGES****

https://journals.plos.org/plospathogens/article/file?id=10.1371/journal.ppat.0030005&type=printable]]

III. Barriers to Synthesizing and Resurrecting Viruses by Synthetic Biology and Reverse Genetics

Genetic engineering of viruses requires the development of infectious clones from which recombinant viruses can be isolated*. Two basic strategies exist to develop and molecularly clone a viral genome: classic recombinant DNA approaches or synthetic biology. Although the basic methodology is different, the outcome is the same, a full length DNA copy of the viral genome is constructed which is infectious upon delivery to a permissive host cell.*

Classic recombinant DNA approaches require the availability of viral nucleic acid, which is normally isolated from infected tissues or cells and used as template for cloning and sequence analysis.

For RNA viruses, *the approach includes using reverse transcriptase and polymerase chain reaction to clone overlapping pieces of the viral genome and then whole genome assembly and sequence validation before successful recovery of recombinant viruses (10). Virus genome availability is an important issue and until recently, a major bottleneck in constructing a molecular clone to any BW virus. Most, though not all, viral BW agents are not readily available except in high containment BSL3 and BSL4 laboratories throughout the world. The few sites and lack of funding support historically limited access to a small number of researchers, although increased support for BW research has greatly increased the distribution and availability of these agents throughout the world (31).*

Most viruses are also available in zoonotic reservoirs although successful isolation may require an outbreak or knowledgeable individuals carrying out systematic sampling of hosts in endemic areas. Then, containment facilities for replicating virus are necessary.

Some exceptions to this general availability of controlled viruses include early 20th century influenza viruses like the 1918 H1N1 (Spanish flu), the 1957 H2N2 (Asian Flu), smallpox viruses (extinct 1977) and perhaps the 2002-2003 epidemic SARS-CoV strains, all of which are likely extinct in the wild given the lack of recent human disease. With the molecular resurrection of the 1918 H1N1 strain using recombinant DNA techniques (81), these viruses only exist in select laboratories distributed throughout the world.

Two general approaches exist for synthetic reconstruction of microbial genomes from published sequence databases: de novo DNA synthesis and polymerase cycling assembly (PCA). Roughly 50 commercial suppliers worldwide provide synthetic DNAs using either approach, mostly in the

range of <5.0Kb, although at this time only a few companies can assemble DNAs >30Kb.

For example, Blue Heron's GeneMakerTM is a proprietary, high-throughput gene synthesis platform with a ~3-4 week turnaround time and is reported to be able to synthesize any gene, DNA sequence, mutation or variant- including SNPs, insertions, deletions and domain-swaps with perfect accuracy regardless of sequence or size (http://www.blueheronbio.com/).

Most commercial suppliers, however, use polymerase cycling assembly (PCA), a variation on PCR. Using published sequence, sequential ~42 nucleotide oligomers are synthesized and oriented in both the top and bottom strand, as pioneered for ΦX174 (73) ***(Figure 9).***

Top and bottom strand oligomers overlap by ~22 bp. The PCA approach involves:

1) phosphorylation of high purity 42-mers (oligonucleotide strands of DNA) in the top and bottom strand, respectively,

2) annealing of the primers under high stringency conditions and ligation with the Taq ligase at 55°C,

3) assembly by polymerase cycling assembly (PCA) using the HF polymerase mixture from Clontech (N-terminal deletion mutant of Taq DNA polymerase lacking 5'-exonuclease activity and Deep Vent$_R$ polymerase [NEB] with 3' exonuclease proofreading activity),

4) PCR amplification and cloning of full length amplicons ***(Figure 9****).*

The key issue is to use HPLC to maximize oligomer purity and to minimize the numbers of prematurely truncated oligmers used in assemblages. ***As PCR is an error prone process, the PCA approach is also error prone and it requires sequence verification to ensure accurate sequence****. PCA is also limited to DNAs of 5-10 Kb in length which is well within the genome sizes of many viral genomes, although improvements in PCR technologies could extend this limitation. Both approaches, coupled with systematic genome assembly techniques shown in Figure 4, will allow assembly of extremely large viral genomes, including poxviruses and herpes viruses.*

Consequently, ***knowledgeable experts can theoretically reconstruct full length synthetic genomes for any of the high priority virus pathogens, although technical concerns may limit the robustness of these approaches. It is conceivable that a bioterrorist could order genome portions from various synthesis facilities distributed in different countries throughout the world and then assemble an infectious genome without ever having access to the virus. To our knowledge, no international regulatory group reviews the body of synthetic DNAs ordered globally to determine if a highly pathogenic recombinant virus genome is being constructed.***

Synthetic S glycoproteins are synthesized and inserted into the SARS-CoV molecular clone; allowing for recovery of recombinant viruses encoding zoonotic S glycoproteins*.*

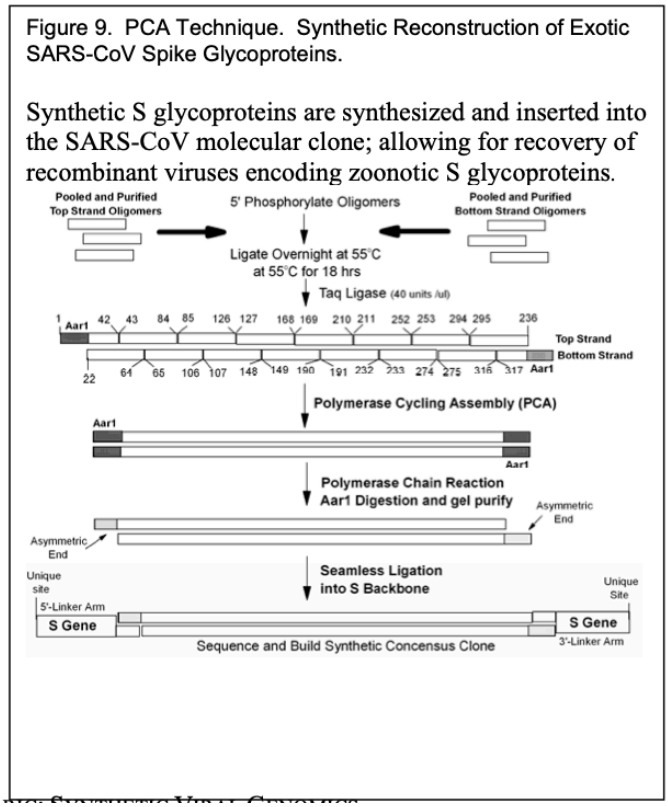

Figure 9. PCA Technique. Synthetic Reconstruction of Exotic SARS-CoV Spike Glycoproteins.

What, then, are the technical barriers to the reconstruction of viral genomes? Three major issues are generally recognized: ***sequence accuracy, genome size and stability, and expertise.*** *They are discussed in this order below.*

Sequence databases record submissions from research facilities throughout the world. However, they have limited ability to review the accuracy of the sequence submission. Consequently, these databases are littered with mistakes ranging from 1 in 500 to 1 in 10,000 base pairs. In general, large sequencing centers are more accurate than independent research laboratories (18, 36). Accurate sequence is absolutely essential for rescuing recombinant viruses that are fully pathogenic (7, 10, 30, 85, 86) as even a single nucleotide change can result in viable virus that are completely attenuated in vivo (74).

Sequence accuracy represents a significant barrier to the synthetic reconstruction of these highly pathogenic viruses. RNA viruses exist in heterogeneous "swarms" of "microspecies," thus requiring the identification of a "master sequence;" i.e., the predominant sequence identified after sequencing the genome numerous times. Consequently, full length sequence information may have been reported, but the published sequence may actually not be infectious. Problems with sequence accuracy are proportional to genome size, as reported sequence for large viral genomes will more likely include a higher number of mutations than small genomes. In many instances, sequence errors will reside at the ends of viral genomes because the ends are

oftentimes more difficult to clone and sequence.

Using state of the art facilities, the smallpox genome from a Bangladesh 1975 strain was sequenced (47). However, an error rate of 1:10,000 would result in about 19-20 mistakes and 10-14 amino acid changes in the recombinant genome. Should these mistakes occur within essential viral proteins or occur in virulence alleles, recovery of highly pathogenic recombinant viruses might be impossible. More recently, another genome sequence of Variola major (India 1967) has been reported in the literature (Bangladesh 75, and India 67; Accession # X69198 and L22579).

These full-length genomes differ in size by 525 base pairs, contain ~1500 other allelic changes scattered throughout the genomes, and also differ in size and sequence with the ***Variola minor genome (Figure 5). Although roughly 99.1% identical, which of these reported sequences are correct? Will pathogenic virus be recovered from a putative molecular clone of either, both or neither? If neither is infectious, which changes are responsible for the lethal phenotype? In the absence of documentation of the infectivity of a reported sequence, it becomes difficult to accurately predict the correct sequence that will allow for the recovery of infectious virus.***

At best, a combination of bioinformatics, evolutionary genetic and phylogenetic comparisons among family members may identify likely codon and nucleotide inconsistencies, simultaneously suggesting the appropriate nucleotide/codon at a given position.

In the case of poxviruses, only two full length sequences of Variola major have been reported, hampering such sequence comparisons. Ultimately this approach only allows informed guesses that may not result in the production of recombinant virus.

Obviously, reported full length genomic sequences that have been demonstrated to generate infectious viral progeny provide an exact sequence design for synthetic resurrection of a recombinant virus, greatly increasing the probability of success. In the absence of this data, multiple full-length submissions are needed to enhance the probability of success.

Another problem hampering the development of synthetic DNA genomes for genetic manipulation are genome size and sequence stability in microbial vectors. ***Many viral full-length cDNAs, including coronavirus genomes and certain flavivirus genomes like yellow fever virus are unstable in microbial vectors (10). Low copy BAC vectors and stable cloning plasmids oftentimes reduce the scope of this problem although instability has been reported with large inserts following passage (1, 85). Plasmid instability might be caused by sequence toxicity associated with the expression of viral gene products in microbial cells or the primary sequence might simply be unstable in microbial vectors, especially sequences that are A:T rich.***

To circumvent this problem, plasmid vectors have been developed that contain poly-cloning regions flanked by several transcriptional and translational stops to attenuate potential expression of toxic products (86).

The development of wide host range, low copy vectors that can be used in Gram positive or lactic acid bacteria may also allow amplification of sequences that are unstable in E. coli hosts. Alternatively, theta-replicating plasmids that are structurally more stable and that accommodate larger inserts than plasmids that replicate by rolling circle models may alleviate these concerns in the future (3, 35, 58).

Poxvirus vectors also provide an alternative approach for stably incorporating large viral genome inserts, although long- term stability of these vectors is unknown (1, 77).

The technical skill needed to develop full length infectious cDNAs of viruses is not simple and requires a great deal of expertise and support: technically trained staff, the availability of state of the art research facilities, and funding.

Theoretically, the ability to purchase a full-length DNA of many viral biodefense pathogens is now possible, especially for those virus genomes that are less than 10 kb in length. In addition, defined infectious sequences are documented and methods have been reported in the literature. Infectious genomes of many Class IV viruses could be purchased and the need for trained staff becomes minimized.

Today, a picornavirus or flavivirus genome could be purchased for as little as $15,000, a coronavirus genome for less than $40,000. It is much more difficult to reconstruct large viral genomes, meaning that trained staff and state of the art facilities become very essential to the process.

However, it is conceivable that technical advances over the next decade may even render large viral genomes commercially available for use by legitimate researchers, but perhaps also by bioterrorists.

IV . Risk and Benefits of Synthetic Organisms

A. Benefits to Society

The benefits of recombinant DNA have been heavily reviewed in the literature and include the development of safe and effective virus platform technologies for vaccine design and gene therapy, the production of large quantities of drugs and other human and animal medicines, and agricultural and other products key to robust national economies. Genetic engineering of bacteria and plants may allow for the production of large quantities of clean burning fuels, produce complex drugs, design highly stable biomolecules with new functions, and develop organisms that rapidly degrade complex pollutants (52, 56, 64, 78).

Comparative genomics also provides numerous insights into the biology of disease-causing agents and is allowing for the development of new diagnostic approaches, new drugs and vaccines (27). Synthetic biology enhances all of the opportunities provided by recombinant DNA research. The main advantages of synthetic genomics over classic recombinant DNA approaches are speed and a mutagenesis capacity that allow for whole genome design in a cost effective manner (6). How will synthetic biology protect the overall public health?

A major advantage is in the development of rapid response networks to prevent the spread of new emerging diseases. Platform technologies allow for rapid detection and sequencing of new emerging pathogens.

The SARS-CoV was rapidly identified as a new coronavirus by gene discovery arrays and whole genome sequencing techniques within a month after spread outside of China (37, 46, 83, 84). Similar advances were also made in the identification of highly pathogenic avian H5N1 influenza strains, hendra virus and in other outbreaks. Sequence information allowed for immediate synthesis of SARS and H5N1 structural genes for vaccines and diagnosis and the rapid development of candidate vaccines and diagnostic tools within a few months of discovery.

Classic recombinant DNA approaches requires template nucleic acid from infected cells and tissues (limited supply), followed by more tedious cloning and sequence analysis in independent labs throughout the world. As access to viral nucleic acids historically limited response efforts to only a few groups globally, research productivity was stifled. Synthetic biology results in a true paradigm shift in virus vaccine, therapeutic and diagnostic discovery, resulting in the near simultaneously engagement of multiple laboratories as genome sequence becomes available ***(Figure 10).***

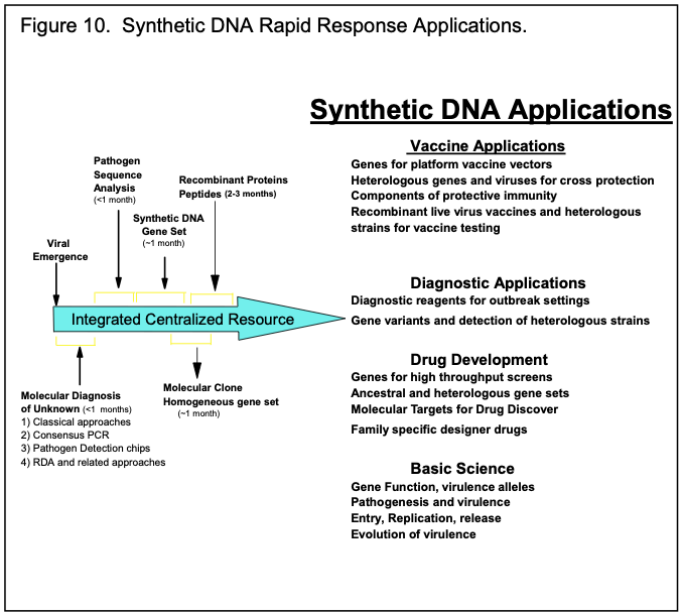

Figure 10. Synthetic DNA Rapid Response Applications. Synthetic DNA Applications

Genome sequence provides for rapid incorporation of synthetic genes into platform technologies that allow for rapid diagnosis and epidemiologic characterization of the incidence, prevalence and distribution of new pathogens in human and animal hosts. ***Synthetic genes can be immediately incorporated into recombinant virus or bacterial vaccine platforms and tested in animal models and/or humans.*** *Synthetic genes and proteins become essentially immediately available for structural studies, for high throughput identification of small molecule inhibitors and for the rational design of drugs.*

Synthetic full length molecular clones become available for genetic analysis of virus pathogenicity and replication, construction of heterotypic strains for vaccine and drug testing, rapid development of recombinant viruses containing indicator genes for high-throughput screens and for the development of live attenuated viruses as vaccines or seed stocks for killed vaccines. **ATTENUATED (WEAKENED) VIRUSES CAN BE MADE TO REGAIN THEIR VIROLENCE**

Thus, the availability of synthetic genes and genomes provides for rapid development of candidate drugs and vaccines, although significant bureaucratic hurdles must be overcome to allow for rapid use in vulnerable human populations. ***We note that highly pathogenic respiratory viruses can be rapidly distributed worldwide, providing only limited opportunities and time for the prevention of global pandemics and the preservation of the overall public health.***

B. Risks to Society

1. Bioterrorism

The historical record clearly shows that many nations have had biological weapons programs (of varying degrees of development) throughout the 20 century including many European nations, the USSR and the United States, Japan and Iraq. From relatively unscientific programs early in the 20th century, progressively more sophisticated scientific programs developed during WWI and the Cold War.

There is little doubt that the genomics revolution could stimulate a new generation of potential program development (27, 76). *It is also well established that the biological revolution, coupled with advances in biotechnology could be used to enhance the offensive biological properties of viruses simply by altering resistance to antiviral agents* ***(e.g., herpes viruses, poxviruses, influenza), modifying antigenic properties (e.g, T cell epitopes or neutralizing epitopes), modifying tissue tropism, pathogenesis and transmissibility, "humanizing" zoonotic viruses, and creating designer super pathogens (27, 59).***

These bioweapons could be targeted to humans, domesticated animals or crops, causing a devastating impact on human civilization. Moreover, applications of these approaches are certainly not limited to the list of pathogens recorded throughout this report—well developed engineering tools have been developed for only a few BW agents, making them relatively poor substrates for biodesign.

A clever bioterrorist might start with a relatively benign, easily obtainable virus (BSL2) and obtain an existing molecular clone by simply requesting it from the scientists who work with these agents. Then, using the expanding database of genomic sequences and identified virulence genes, the benign viral genome could be modified into more lethal combinations for nefarious use.

As recombinant DNA approaches, infectious DNA clones and the general methods needed to bioengineer RNA and DNA viruses have been available since the 1980-1990's, what new

capabilities does synthetic biology bring to a biowarrior's arsenal?

Clearly, recombinant viral genomes and bioweapon design can be accomplished using either or a combination of both approaches, suggesting that synthetic biology will have little impact on the overall capabilities of bioweapons research.

However, synthetic biology provides several attractive advantages as compared with standard recombinant DNA approaches; specifically

1) speed,

2) mutagenic superiority,

3) ease of genome construction and

4) low cost.

The main paradigm shift may be that the approach is less technically demanding and more design-based, requiring only limited technical expertise because the genome can be synthesized and purchased from commercial vendors, government sponsored facilities, or from rogue basement operations (e.g., bioterrorist sponsored or private entrepreneur). Main technical support might include a competent research technician and minimal equipment to isolate recombinant pathogens from the recombinant DNAs.

Standard recombinant DNA techniques are hands-on, laborious and slow, requiring multiple rounds of mutagenesis and sequence validation of the final product. At the end of this effort, there is no guarantee that the designer or synthetic genome will function as intended (see other sections), dictating the need for high throughput strategies.

Synthetic genomes can be devised fairly rapidly using a variety of bioinformatics tools and purchased fairly cheaply ($1.10/base at current rates), allowing for rapid production of numerous candidate bioweapons that can be simultaneously released (e.g., survival of the fittest approach) or lab tested and then the best candidate used for nefarious purposes.

The latter approach assumes that an organization has funded the development of a secure facility, has provided trained personnel and is willing to test the agents and/or passage them in humans, as animal models may be unreliable predictors of human pathogenesis. Assuming the technology continues to advance and spread globally, ***synthetic biology will allow for rapid synthesis of large designer genomes (e.g., ~30 Kb genome in less than a couple of weeks); larger genomes become technically more demanding. It seems likely that a standard approach could be designed for recovering each synthetic virus, further minimizing the need for highly trained personnel.***

Will synthetic or recombinant bioweapons be developed for BW use? *If the main purpose is to kill and inspire fear in human populations, natural source pathogens likely provide a more* reliable source of starting material. Stealing the BW agent from a laboratory or obtaining the pathogen from natural outbreak conditions is still easier than the synthetic reconstruction of a

pathogenic virus. *These conditions, however, change as 1st and 2nd generation candidate vaccines and drugs are developed against this select list of pathogens, limiting future attempts to newly emerged viruses.* ***If notoriety, fear and directing foreign government policies are principle objectives, then the release and subsequent discovery of a synthetically derived virus bioweapon will certainly garner tremendous media coverage, inspire fear and terrorize human populations and direct severe pressure on government officials to respond in predicted ways****.*

2. Prospects for Designer Super Pathogens

Advances in genomics may provide new approaches for mixing and matching genetic traits encoded from different viral pathogens, as over 1532 genome length sequences are available in Genbank. ***A large number of recombinant viruses have been assembled using reverse genetic approaches including chimeric flaviviruses, chimeric enteroviruses and coronaviruses, HIV, lentiviruses and others usually for the purposes of generating vaccines or dissecting basic questions about, e.g., viral metabolism*** *(29, 34, 39, 40, 50).*

Importantly, ***recombinant viruses are actively being designed with programmed pathogenic traits as a means of controlling certain insect and animal pests, providing both theoretical and practical strategies for conducting effective biowarfare (53, 69). More importantly, the identification of numerous virus virulence genes that target the innate immune response (e.g., interferons, tumor necrosis factors, interleukins, complement, chemokines, etc.), apoptosis (programmed cell death) and other host signaling pathways provides a gene repository that can be used to potentially manage virus virulence (5, 8, 9, 26, 70).***

Poxviruses and Herpes viruses, for example, encode a suite of immune evasion genes and pro-apoptotic genes (48, 54). More recently, virus encoded microRNAs were identified in Epstein Barr Virus (EBV) and other herpes viruses, which function to silence specific cellular mRNAs or repress translation of host genes that function in cell proliferation, apoptosis, transcription regulators and components of signal transduction pathways (62). Although the function of many viral micro-RNAs are unknown, it is likely that they regulate protein coding gene expression in animals and influence pathogenesis (61).

Moreover, microRNAs could also be designed and targeted to downregulate specific human signaling pathways.

The identification of virulence alleles is traditionally a first step to attenuating virus virulence. However, highly virulent murine pox virus (ectromelia) were recovered after the host IL-4 gene was incorporated into the genome. IL-4 expression altered the host Th1/Th2 immune response leading to severe immunosuppression of cellular immune responses, high viremias, and increased pathogenesis following infection. The recombinant virus was lethal in both control and in immunized or therapeutically treated mice (33, 67).

More troubling was the belated recognition that this outcome could have been predicted based on our understanding of pox molecular virology and pathogenesis, suggesting that increased virulence can be rationally modeled into existing pathogens (55) and subsequent extension of these findings to other, but not all animal poxviruses (75). Many key questions remain

unanswered regarding the ability to translate results with inbred mouse strains and murine poxviruses to outcome responses in outbred human populations infected with recombinant human poxviruses.

Today, these outcomes cannot be predicted.

Is it possible to enhance virulence by recombinant DNA approaches in other virus families and animal models? The influenza NS1 gene (an interferon antagonist gene) also enhances the replication efficiency of avian Newcastle disease virus in human cells (57), although the in vivo pathogenesis of these isolates has not been evaluated.

More recently the SARS-CoV ORF6, but not the ORF3a group specific antigens (specific proteins of the virus) were shown to enhance mouse hepatitis virus virulence in inbred mice strains. The mechanism by which the SARS-CoV ORF6 product enhances MHV virulence is not known at this time (60). Finally, viral gene discovery and sequence recovery using DNA microarrays will greatly increase the electronic availability of sequences from many novel human, animal and insect viruses (83, 84). This revolution in pathogen detection, coupled with rapid genome sequencing, provides a rich parts list for designing novel features into the genome of viruses.

Another approach might be to "humanize" zoonotic viruses by inserting mutations into virus attachment proteins or constructing chimeric proteins that regulate virus species specificity (viral attachment proteins bind receptors, mediating virus docking and entry into cells). For example, the mouse hepatitis virus (MHV) attachment protein, the S glycoprotein, typically targets murine cells and is highly species specific. Recombinant viruses contain chimeric S glycoproteins that are composed of the ecto-domain of a feline coronaviruses fused with the c-terminal domain of MHV S glycoproteins targets feline, not murine cells for infection. The pathogenicity of these chimeric coronaviruses is unknown (39). As information regarding the structure and interactions between virus attachment proteins and their receptors accumulate, data will provide detailed predictions regarding easy approaches to humanize zoonotic strains by retargeting the attachment proteins to recognize human, not the animal receptors (43-45). Conversely, it is not clear whether species retargeting mutations will result in viruses that produce clinical disease in the human host.

Synthetic DNAs and systematic assembly approaches also provide unparalleled power for building genomes of any given sequence, simultaneously providing novel capabilities for nefarious use. For example, genome sequences represent fingerprints that allow geographic mapping of the likely origin of a given virus. Recombinant viruses generated from classic recombinant DNA techniques will carry the signature of the parental virus used in the process as well as novel restriction sites that were engineered into the genome during the cloning process. In contrast, synthetic viral genomes can be designed to be identical with exact virus strains

circulating in any given location from any year. This powerful technique provides the bioterrorist with a "scapegoat" option; leaving a sequence signature that misdirects efforts at tracking the true originators of the crime. Even better, the approach could be used to build mistrust and/or precipitate open warfare between nations. ****Ralph Baric, Shi Zhengli, etc… "NO SEE 'EM" TECHNIQUE****

A simple example might involve the use of the picornavirus foot and mouth disease virus, which is not present on the North American continent, yet is endemic in Africa, Asia, the Middle East and South America. North American herds are not vaccinated against this pathogen, the virus is highly contagious, and the disease is subject to international quarantine. Geographically distinct FMDV strains contain unique sequence signatures allowing ready determination of origin.

A North American outbreak of an infectious "synthetic" FMDV virus containing signature sequences reminiscent of strains found in select Middle East or Asian nations that are viewed as terrorist states by the US government would inflame worsening tensions and could provide a ready excuse for military retaliation. Project costs would likely be less than $50K, including synthesis, recovery and distribution.

Another possibility may be to optimize replication efficiency by optimizing for human codon use, especially useful in "humanizing" zoonotic viruses although to our knowledge codon optimization has never been linked to increased replication or pathogenesis.

In both examples, standard recombinant DNA approaches would be difficult and tedious, ***while synthetically derived genomes could be readily manufactured within weeks.***

Virus pathogenesis is a complex phenotype governed by multiple genes and is heavily influenced by the host genetic background. Virus genes influence virus-receptor interaction, tissue tropism, virus-host interactions within cells, spread throughout the host, virion stability and transmission between hosts. Colonization of hosts is influenced by ecologic factors including herd immunity, cross immunity and host susceptibility alleles. In general, the rules governing virulence shifts are hard to predict because of the lack of research and ethical concerns that have historically limited this type of research. In fact, the research itself promotes an emerging conundrum as to the limits of biodefense research: the need to know to protect the overall public health versus the development of models to elucidate the fundamental principles of pathogen design *(4).*

Synthetic biology and recombinant DNA approaches provide numerous opportunities to construct designer pathogens encoding a repertoire of virulence genes from other pathogens, while simultaneously providing a rapid response network for preventing the emergence and spread of new human and animal diseases. The state of knowledge prevents accurate predictions regarding the pathogenic potential of designer viruses; most likely, replication and pathogenesis would be attenuated.

As a principle goal of bioterrorism is to inspire fear*, highly pathogenic outcomes may not be necessary as large scale panic would likely result after the release of designer pathogens in US cities. Given the reported findings and the large repertoire of host, viral and microbial virulence*

genes identified in the literature, the most robust defense against the development of designer viral pathogens for malicious use is basic research into the mechanisms by which viral pathogenesis might be manipulated and applied counter measures that ameliorate these pathogenic mechanisms. This justification, however, blurs the distinction between fundamental academic research and bio-weapon development.

3. Ancient Pathogen Resurrection

Paleomicrobiology is an emerging field dedicated to identifying and characterizing ancient microorganisms in fossilized remains (25). Mega-genomic high throughput large scale sequencing of DNA isolated from mammoths preserved in the permafrost not only identified over 13 million base pairs of mammoth DNA sequence, but also identified novel bacterial and 278 viral sequences that could be assigned to dsDNA viruses, retroviruses and ssRNA viruses (63).

Although DNA genomes can survive for almost 20,000 years (25), RNA virus fossil records do not exist beyond a ~90-100 year window, making it difficult to understand the evolution of virulence, molecular evolution, and the function of modern day viral genes.

Among RNA viruses, the current record is the molecular resurrection of the highly pathogenic 1918 influenza virus, which required almost 10 years of intensive effort using standard recombinant DNA approaches from many laboratories (81).

Obviously, synthetic reconstruction of ancient viral genomes may provide a rapid alternative as sequence database grow more robust over the next few decades. How pathogenic are these ancient pathogens? Will vaccines and anti-virals protect humans from ancient virus diseases?

Moreover, alternative approaches also exist to regenerate ancient viral sequences. Ancestral gene resurrection using bioinformatics approaches offers a powerful approach to experimentally test hypotheses about the function of genes from the deep evolutionary past (79).

Using phylogenetic methods (38), ancestral sequences can be inferred but the approach suffers from the lack of empirical data to refute or corroborate the robustness of the method. More recently, the sequence of ancestral genes was accurately predicted as evidenced by the synthetic reconstruction of a functional ancestral steroid receptor, Archosaur visual pigment and other genes (15, 16, 79, 80). To our knowledge, phylogenic reconstruction of ancient virus sequences has not been tested empirically but it may be possible to construct replacement viruses encoding ancient structural genes from inferred sequence.

Such viruses would have unpredictable pathogenicity, but would likely be highly resistant to vaccines and therapeutics targeted to modern day strains.

4. Summary

Chemical synthesis of viral genomes will become less tedious over the coming years. Costs will likely decrease as synthesis capabilities increase. Moreover, the technology to synthesize DNA and reconstruct whole viral genomes is spreading across the globe with dozens of commercial outfits providing synthetic DNAs for research purposes.

DNA synthesizers can be purchased through on-line sites such as eBay. It is likely that engineering design improvements will allow for simple construction of larger genomes.

The technology to synthetically reconstruct genomes is fairly straightforward and will be used, if not by the United States, then by other Nations throughout the world. It is also likely that synthetic genes and synthetic life forms will be constructed for improving the human condition and they will be released into the environment.

As with most technology, synthetic biology contains risks and benefits ranging from a network to protect the public health from new emerging diseases to the development of designer pathogens. ***Synthetic genome technology will certainly allow for greater access to rare viral pathogens and allow for the opportunity to attempt rationale design of super pathogens.***

It is likely that the threat grows over time, as technology and information provide for more rational genome design. The most robust defense against the development of designer viral pathogens for malicious use may be basic research into the mechanisms by which viral pathogenesis might be manipulated so that applied countermeasures can be developed.

Addendum (November 2007): *Since the writing of this initial report, recent studies have demonstrated the availability of a reverse genetic systems for reovirus, a group III dsRNA virus (Kobayashi T, Antar AA, Boehme KW, Danthi P, Eby EA, Guglielmi KM, Holm GH, Johnson EM, Maginnis MS, Naik S, Skelton WB, Wetzel JD, Wilson GJ, Chappell JD, Dermody TS.*

A plasmid-based reverse genetics system for animal double- stranded RNA viruses. Cell Host Microbe. 2007 Apr 19;1(2):147-57) and for additional group V single stranded negative polarity RNA viruses like Rift Valley Fever Virus (Ikegami T, Won S, Peters CJ, Makino S. Rescue of infectious rift valley fever virus entirely from cDNA, analysis of virus lacking the NS gene, and expression of a foreign gene. J Virol. 2006 Mar;80(6):2933-40.)

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Review Paper

Biological Warfare, Bioterrorism and Biodefence

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Abstract

Biological warfare is the intentional use of micro-organisms and toxins to produce disease and death in humans, livestock and crops, their attraction in war, and for use in terrorist attacks is attributed to various unique features. Biological weapons (BWs) can be disseminated by aerosol sprays, explosives or food and water contamination. Bws can strike suddenly without any warning and inflict considerable mortality and morbidity that can continue for a long period, such attacks may create high level of panic, environment contamination and extreme pressures on emergency health services. Bioterrorism is the use of bws in terrorism. Current concerns regarding the use of bws result from the increasing number of countries that are engaged in the proliferation of such weapons and their acquisition by terrorist organizations. The need of the hour is to develop biodefence by full international cooperation and to educate the likely target populations about precautions and protective measures to be taken in such attacks.

https://www.researchgate.net/publication/216444017_Biological_warfare_bioterrorism_and_biodefence

Section Three:

"Legal Walls of the Covid-19 Kill Box"

Report: Attorney Todd Callender's January 30, 2022 interview by Dr. Elizabeth Lee Vliet.
I encourage readers to listen to this podcast interview of Attorney Todd Callender, conducted by Dr. Elizabeth

Lee Vliet on Jan. 30, 2022.[1]
Callender is an international disability rights law expert and currently represents military personnel challenging Department of Defense "vaccine" mandates.

Below is a full written report, including supporting research, additional information and related developments on the subject of the legal relationship between government acts and how the Covid-19 event is legally classified: pandemic, act of biological or chemical war, contract fraud, and/or a crime against humanity. At the current time, the formerly criminal actions of governments are legally defined as not-crimes, and many of the crime victims who formerly would have been entitled to human rights protections under law, can be legally defined as not-humans. But it's not the end of the world, or the end of time. So it's not a permanent or irreversible, or inevitable, state of human affairs.

"Veni, vidi, Deus vicit."[2] *- Jan Sobieski, Warrior King of Poland, Battle of Vienna, 1683*

[1] https://www.americaoutloud.com/compulsory-vaccination-and-forced-quarantine-camps-in-arizona/
[2] https://www.newadvent.org/cathen/14061c.htm

February 26, 2022 Updated May 6, 2022

Essays on Teleopolitics by Katherine Watt. State College, Pennsylvania, 2022 1

Synopsis

In the one-hour interview, Callender described international and federal legislative, executive, judicial, medical and military frameworks introduced in 1990 and reinforced repeatedly between then and now, using public health emergency predicates to create and control a new sub-human, or trans-human, species.

In the first half of the interview, Callender outlined the 2005 International Health Regulations (to which the United States is a signatory), which allow for the suspension of national sovereignty and federal constitutional and statutory legal frameworks during a "public health emergency of international concern" as declared by the World Health Organization director-general. Callender also laid out the legal significance of a 2013 US Supreme Court intellectual property case (Association for Molecular Pathology v. Myriad Genetics), which rendered genetically-modified organisms (such as plant seeds and mice) as legally chattel property of those who own the patents for the inserted genes.

If that US Supreme Court precedent stands, it could be used to legally render people who have been injected over the past year with the mRNA/DNA pharmaceutical products marketed as Covid-19 vaccines," as the chattel property of the injection patent holders: Pfizer, BioNTech, Moderna and Johnson & Johnson corporations. The US Congress could adopt new legislation governing the legal status of genetically "vaccinated" citizens to define them as legally identical to natural humans, thus overriding the Supreme Court precedent and ensuring that they retain all the legal, human, constitutional, civil and other rights that they lack under the GMO case law.

In the second half of the January 30 interview, Callender described state and county legal frameworks currently being put into place to make the legal state of emergency and related extraordinary executive powers permanent, and to implement the next, more-militarized enforcement steps at the community level. Callender described "intergovernmental agreements," which he has received from whistleblowers in Cochise County, Arizona, and other US states.

The IGAs link continued federal reimbursement funding protocols for community hospitals and nursing homes — which have financially coerced health care providers for the past two years already — to continued hospital and nursing home compliance with deadly "treatment" protocols and injection mandates. The intergovernmental agreements (IGAs) are being put in place alongside other, reinforcing legal frameworks. For example, in Arizona, a petition from individuals claiming to be public health experts was submitted to the Arizona governor, in support of the governor's petition to the Arizona legislature, requesting that the legislature make the governor's temporary emergency powers created by Covid-19 permanent.

The state-level action is happening in several states, including Pennsylvania and Arizona (covered below); New York[3] (amendments to Title 10 NYCRR) and Florida[4] (HB7021). It's paralleled at the federal level by, for example, President Biden's indefinite extension of the Covid-19 state of emergency, issued on Feb. 18, 2022.

"TO WHOM IT MAY CONCERN"

Callender advises anyone who wants to end hospital and nursing home homicides to work at the household level: appeal to relatives and friends who are directly tasked with enforcement, whether they're hospital workers, nursing home workers, police officers, National Guard soldiers, medical coders responsible for attaching the ICD-10 diagnostic codes to patients. "Educate them that they are really a cog in this great giant machine designed to kill as many people as is possible. Particularly the unvaccinated. And those who are vaccinated, to envelope them in the machine for whatever the purpose is of The Owners."

Other necessary steps include removing emergency powers from all levels of government, and running for office to repeal the enabling laws and enact laws protecting human rights and human lives. "This is about the survival of our species. Stand up. Say no. Don't go with the program. Civil disobedience. That is our only hope."

[3] https://margaretannaalice.substack.com/p/letter-to-the-new-york-state-department?utm_source=url [4] https://margaretannaalice.substack.com/p/letter-to-governor-ron-desantis?utm_source=url

* Outline

- *Brief Analysis*
- *1990 - Three United Nations conventions*
- *2005 - The Owners, through the World Health Organization, create International Health Regulations*
- *2003, 2005 and 2014 US Presidents' Executive Orders listing quarantinable communicable diseases*
- *2004 - 2006 - Congress passes Project Bioshield Act of 2004, PREP Act of 2005 and Pandemic and All- Hazards Preparedness Act of 2006 [Section added 3/26/22]*
- *2017 - Major rulemaking by US Department of Health and Human Services*
- *Cumulative legal effect of International Health Regulations (IHR) and implementing national regulations and executive orders*
- *2013 - US Intellectual Property and Patent Law; Title 35 U.S.C. 101*
- *2020 — Clinical Treatment Protocol and Financial Coercion of Hospitals, Doctors and Nurses*
- *2008 — Merger of public health with law enforcement*
- *Pennsylvania case study; how the IHR voids constitutional and statutory law and underpins public health martial law.*
- *Ransom demand from World Health Organization to G20.*
- *World Health Organization now working toward an expansion of the 2005 International Health Regulations*
- *Conclusion*
- *Related essays*

Note: The following report is focused on legal frameworks. It doesn't include information about the deadliness of the products marketed as Covid-19 vaccines, their inefficacy at infection control, or severe adverse effects: the debilitating and fatal damage they cause to human neurological, cardiovascular, reproductive and immune systems and organs. The inherent toxicity is far beyond proved, and if readers are interested in up-to-date coverage, please check out Steve Kirsch[5], Jessica Rose[6] and Alex Berenson[7] on Substack for reporting and analysis, and RealNotRare[8] for firsthand accounts. Many people have been investigating the crimes and raising the alarm publicly since late 2020, with no access to legacy media and no response from the legally-responsible government entities.

[5] https://stevekirsch.substack.com/
[6] https://jessicar.substack.com/
[7] https://alexberenson.substack.com/ [8] https://www.realnotrare.com/

Update 2/28/22: this report also doesn't cover the issue of lab leak vs. natural outbreak, nor the issue ofintentional[9]design and release vs. accidental lab leak. Good sources for that subject areIgor Chudov[10], Arkmedic[11], and Charles Rixey[12].

* Brief Analysis

Callender's paper trail and legal analysis make sense of a lot of things that haven't made sense all along, especially two things:

1. the strange abrogation of the doctor-patient relationship and physicians' independent diagnostic and treatment judgment; and

2.the strange refusal of the courts to even hear challenges to the public health police state on constitutional and evidentiary grounds, much less judicially stop the tyranny.

It also helps explain why the avalanche of coercion continues and is escalating, now with major American corporations imposing their own injection mandates and mass firings, despite the expanding torrent of evidence that the injections are deadly and don't stop infections, and despite some US courts overturning some of federal mandates on limited, procedural grounds.

It also helps explain that the governments of nation-states around the world won't permanently stop the legalized mass murder, maiming and enslavement of the world's people through

- *masking and social distancing;*
- *detentions in homes, nursing homes, schools, hospitals, military barracks and quarantine-facilities;*
- *withholding of preventative and early treatments for Covid-19;*
- *coerced administration of ventilation, Remdesivir, midazolam and other lethal poisons; and*
- *administration of mRNA and DNA bioweapon injections;*
- *establishment of restrictive digital surveillance, identity, currency and social credit score controls until those governments and their central banks (the Federal Reserve in the United States) are prepared to withdraw from political and financial participation the international legal frameworks (such as the International Health Regulations), and endure and recover from the financial and economic consequences: blocked access to the international financial system controlled by the individuals who control the Bank of International Settlements.*

* 1990 - Three United Nations conventions

Callender began his interview with a "Tyranny 101" introduction, talking about the "warp-speed, orchestrated" global command-and-control campaign that rolled out starting in January 2020. He observed that humans will trade liberty for security when they believe they are under a threat.

"It has worked for thousands of years," Callender said. "It has worked again, to a large extent. Probably not to the extent that they were hoping. A lot of people were aware that something was wrong. A lot of people were, I think, divinely --, were whispered to in their ear, and used their discernment to understand that things were not what they appeared."

Callender said that the human individuals behind the global Covid-19 crisis are the men and women who privately own the Bank of International Settlements (BIS). He calls them "The Owners," as a shorthand. (The names of the current leaders of the Owner families[13] don't matter for understanding the legal frameworks put in place to expand their political power and wealth, but their identities will matter for holding them accountable someday.)

Through the BIS, they own all the other private central banks in the world, including the US Federal Reserve Bank. Through the banks, over the past century or so, they consolidated their ownership and control of all financial wealth and all physical assets in the world: energy systems; water and food supplies; money supplies used as a medium of exchange; and most (but not all) media and information channels.

1990 - The Owners decide there are too many people in the world.

Around 1990, Callender said, there were a lot of people in the world and populations were continuing to grow. The Owners decided depopulation was needed. They realized that when populations get very large it's very difficult to control or kill them. Historically, the only things that kill very large numbers of people are human-caused genocides and natural plagues and famines.

Arguably, Covid-19 and the subsequent pharmaceutical products marketed as "vaccines" combine the most effective features of genocide and plague: they weaken and kill lots of people, are human-made, but the deaths can be made appear naturally-caused. Rather than undertake a blatant and likely politically unpopular gun- or bomb-based global genocide, Callender explained, The Owners decided instead to promote the idea among world populations of "sustainable development."

9https://www.lifesitenews.com/news/dna-found-in-coronavirus-was-patented-by-moderna-3-years-before-the-pandemic/

[10] https://igorchudov.substack.com/
[11] https://arkmedic.substack.com/p/absolute-proof-the-gp-120-sequences?s=r
[12] https://prometheusshrugged.substack.com/p/theblindwatchmaker?s=r

They began by setting the narrative frame that there are too many people and not enough resources in the world to support those people; that climate change driven by human use of carbon-based energy resources would cause deadly earthquakes, floods, disease outbreaks, food shortages and other disasters; and that public health and the thriving of future generations require coordinated international action to reduce population, as a way to mitigate climate change.

1992 - The Owners extort governments of the world's nation-states to adopt Agenda 21 at the Earth Summit

In June 1992, the United Nations hosted the United Nations Conference on Environment and Development, commonly called the Earth Summit, in Rio de Janeiro, Brazil. At the conference, 179 participating nations adopted Agenda 21 (later renamed Agenda 30)[14], laying out "a comprehensive plan of action to be taken globally, nationally and locally by organizations of the United Nations System, Governments, and Major Groups in every area in which human impacts on the environment."

The goals of Agenda 21/30, according to Callender, are threefold:

1. *elimination of private property*
2. *elimination of borders and national sovereignty*
3. *depopulation*

[13] https://hannenabintuherland.com/usa/the-federal-reserve-cartel-the-eight-families-who-own-usa-dean-henderson-herlandreport/

[14] https://grist.org/politics/agenda-21-everything-you-need-to-know-about-the-secret-u-n-plot-in-one-comic/

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Truth in World Health Organization advertising[15]

1992-1994 - The Owners extort governments of the world's nation-states to adopt the UN Framework Convention on Climate Change

At the 1992 Rio conference, the United Nations Framework Convention on Climate Change[16] *was also opened for nation-states to sign. By 1994, enough nations had signed for the convention*[17] *to enter into force.*

1994 - The Owners extort governments of the world's nation-states to adopt International Conference on Population and Development Program of Action

In September 1994, the United Nations hosted the International Conference on Population and Development in Cairo, Egypt. Again, 179 nation-states signed on to a 20-year Programme of Action, which was extended in 2010 to cover 2014-2034.[18] *The population control project was framed using keywords including empowerment of women, reproductive health and people-centered development.*

Cumulative impact

Callender explained that after those three mutually-reinforcing international conventions were adopted by the world's national governments — UN Agenda 21/30 (1990); UN Framework Convention on Climate Change (1994); and UN International Conference on Population and Development Program of Action (1994) — The Owners, who had already owned and controlled all of the natural resources in the world, now controlled all of the political resources in the world: the means through which us human beings organize our social lives and power relationships in society. They successfully created an international legal framework that subordinates human rights and national sovereignty to global governing instruments operated privately by a handful of men and women accountable to no one but themselves.

[15] https://www.who.int/immunization/IA2030_draft_4_WHA.pdf?ua=1

[16] http://newsroom.unfccc.int/
[17] https://www.un.org/sustainabledevelopment/climate-negotiations-timeline/
[18] https://www.unfpa.org/resources/a6962-framework-actions-follow-programme-action-international-conference-population-and

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Propaganda campaign

Throughout the 1990s and into the 21st century, The Owners mounted an intense propaganda campaign to persuade the world's human population that people are "the problem," Callender said. The media messages instilled the notion that ordinary people, simply by existing, cause the degradation and destruction of the natural world.

Callender lives outside the United States and has travelled extensively throughout his career over the past few decades. During the Jan. 30 interview, he said he saw the same messages being fed to populations, through governments and media, all over the world over the last 30 years, calling it "a homogenized and very coordinated approach."

The Owners also introduced public health frameworks as a key tool for population control in two forms: control of numbers of people through funding contraception programs to lower birth rates, and control of behavior through manipulation of information. See, for example, two policy documents laying out national and international government programs designed to increase fear levels to increase compliance with social bond disruptions and uptake of pharmaceutical injections during the Covid-19 response in 2020.

- UK SAGE, March 20, 2020[19]
- World Health Organization, Oct. 15, 2020[20]

* 2005 - The Owners, through the World Health Organization, create International Health Regulations

In 2005, through the World Health Organization, the individuals who control the Bank of International Settlements created the International Health Regulations (IHR).

The second edition of the IHR is described, by WHO, as follows:

"In response to the exponential increase in international travel and trade, and emergence and reemergence of international disease threats and other health risks, 196 countries across the globe have agreed to implement the International Health Regulations (2005) (IHR). This binding instrument of international law entered into force on 15 June 2007."

The stated purpose and scope of the IHR are "to prevent, protect against, control and provide a public health response to the international spread of disease in ways that are commensurate with and restricted to public health risks, and which avoid unnecessary interference with international traffic and trade."

The IHR "are not limited to specific diseases, but are applicable to health risks, irrespective of their origin or source." The IHR further, "require States to strengthen core surveillance and response capacities at the primary, intermediate and national level, as well as at designated international ports, airports and ground crossings. They further introduce a series of health documents, including ship sanitation certificates and an international certificate of vaccination or prophylaxis for travelers."

The 2005 International Health Regulations required each signatory nation to adopt implementing legislation, which the United States government did, through revisions to 42 Code of Federal Regulations, Parts 70 and 71.

Those federal laws regulate interstate and foreign quarantine activities during "public health emergencies of international concern" or PHEICs.

[19] https://bailiwicknewsarchives.files.wordpress.com/2021/12/2020.03-uk-paper-re-increasing-fear-levels-in-population.pdf
[20] https://bailiwicknewsarchives.files.wordpress.com/2021/12/2020.10-who-guidance-behavioral-psychology-of-covid-vaccine-manipulation-.pdf

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* 2003, 2005 and 2014 - US Presidents' Executive Orders listing quarantinable communicable diseases

There have been three Executive Orders issued by US Presidents related to the quarantine power of the US Secretary of Health and Human Services laws since 1990. They were promulgated under section 361(b) of the Public Health Service Act (42 U.S.C. 264(b)), and they assigned the President's executive authority to the Secretary of Health and Human Services for implementation.

Executive Order 13295 of April 4, 2003

On April 4, 2003, President George W. Bush signed Executive Order 13295[21]*. Bush's 2003 executive order revoked and replaced Ronald Reagan's Executive Order 12452 of Dec. 22, 1983, which specified quarantinable diseases limited to "Cholera or suspected Cholera, Diphtheria, infectious Tuberculosis, Plague, suspected Smallpox, Yellow Fever, and suspected Viral Hemorrhagic Fevers (Lassa, Marburg, Ebola, Congo-Crimean, and others not yet isolated or named)." Bush's 2003 executive order replaced the list above with the following:*

"(a) Cholera; Diphtheria; infectious Tuberculosis; Plague; Smallpox; Yellow Fever; and Viral Hemorrhagic Fevers (Lassa, Marburg, Ebola, Crimean-Congo, South American, and others not yet isolated or named) and

(b) Severe Acute Respiratory Syndrome (SARS), which is a disease associated with fever and signs and symptoms of pneumonia or other respiratory illness, is transmitted from person to person predominantly by the aerosolized or droplet route, and, if spread in the population, would have severe public health consequences."

In 2003, President Bush added the common cold to the list of communicable diseases empowering the executive branch, through the Secretary of Health and Human Services, to involuntarily detain American citizens.

[21] https://bailiwicknewsarchives.files.wordpress.com/2022/02/2003-executive-order-bush-.pdf

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Executive Order 13375 of April 1, 2014

On April 1, 2005, President Bush signed Executive Order 13375[22], extending the quarantine power of the Health and Human Services Secretary to include: ''(c) Influenza caused by novel or reemergent influenza viruses that are causing, or have the potential to cause, a pandemic.''

In 2005, the executive branch of the federal government granted itself the power to involuntarily detain American citizens for the flu. ***Executive Order 13674 of July 31, 2014 -*** *On July 31, 2014, President Barack Obama signed Executive Order 13674[23], revising Section b of President Bush's 2003 order. The new text expanded on the definition of SARS [the common cold]: ''(b) Severe acute respiratory syndromes, which are diseases that are associated with fever and signs and symptoms of pneumonia or other respiratory illness, are capable of being transmitted from person to person, and that either are causing, or have the potential to cause, a pandemic, or, upon infection, are highly likely to cause mortality or serious morbidity if not properly controlled. This subsection does not apply to influenza.'' In 2014, the federal government expanded its power to detain American citizens for common colds, not only if the diseases "are transmitted" but if they "are capable of being transmitted...and are causing, or have the potential to cause, a pandemic."*

To recap:

- *In 2003, President Bush made the common cold a quarantinable disease under US law.*
- *In 2005, President Bush made the common flu a quarantinable disease under US law.*
- *In 2014, President Obama made suspected but asymptomatic colds quarantinable diseases under US law.*

* 2004-2006 - Congress passes Project Bioshield Act of 2004, PREP Act of 2005 and Pandemic and All-Hazards Preparedness Act of 2006

[Section added 3/26/22 and updated 3/29/22. More information here[24].] The ***Project Bioshield Act[25]*** *(30 pages) was passed by Congress and signed by President George W. Bush on July 21, 2004. The* ***PREP Act[26]*** *was passed by Congress and signed into law on Dec. 30, 2005. It was tagged on as the last 14 pages of a 154-page Department of Defense supplemental appropriations and Hurricane Katrina relief bill.*

[22] https://bailiwicknewsarchives.files.wordpress.com/2022/02/2005-executive-order-bush.pdf
[23] https://bailiwicknewsarchives.files.wordpress.com/2022/02/2014-executive-order-obama.pdf
[24] https://bailiwicknews.substack.com/p/project-bioshield-act-of-2004-and?s=w
[25] https://www.congress.gov/108/plaws/publ276/PLAW-108publ276.pdf
[26] https://www.congress.gov/109/plaws/publ148/PLAW-109publ148.pdf#page=140

The Pandemic and All-Hazards Preparedness Act of 2006[27] was passed by Congress and signed into law on Dec. 17, 2006. Together, these laws changed a lot of federal laws related to bioterrorism, pandemics, drug development, appropriations, contracting, procurement, and product liability. Together with several other laws[28], the Project Bioshield Act and PREP Act are the source of the US Secretary of Health and Human Services' Emergency Use Authorization (EUA) power, through which HHS Secretary Alex Azar first declared Covid-19 a public health emergency a public health emergency on Jan. 31, 2020, the day after World Health Organization Director-General Tedros declared it a "public health emergency of international concern."

Azar then issued a "declaration for medical countermeasures" for Covid-19 effective February 4, 2020[29], followed by other declarations and amendments to the original declarations. Azar's PREP Act declaration bestowed immunity for liability on developers, manufacturers, distributors and vaccinators, for injuries and deaths caused by vaccines developed, manufactured, distributed and administered under Emergency Use Authorization. The only exception is for "willful misconduct," which might apply to Pfizer and Moderna if the clinical trial fraud alleged by whistleblower Brook Jackson[30] can be proved — as Edward Dowd and others are working toward. But it would probably not apply to distributors and injectors who can credibly claim they had no knowledge of the clinical trial fraud.

HHS Secretary Azar's declaration also rendered contractors like Pfizer, Moderna, nurses and pharmacists, as classifiable, in legal terms, as government employees of the Department of Health and Human Services for purposes of the Federal Tort Claims Act and related laws: 28 USC 1346(b) and 28 USC 2672. The Project Bioshield Act of 2004 includes provisions specifically addressing how EUAs are to be declared, maintained and terminated, at 42 USC 360bbb-3[31], relating to use of "unapproved products" or "unapproved uses of approved products." The effect of Azar's PREP Act declaration, through the Project Bioshield Act of 2004, was to authorize government-funded development, marketing, distribution and deployment, by the contractors (Pfizer, Moderna, hospitals, nursing homes, clinics, pharmacies, nurses, pharmacists, etc.) of the pharmaceutical products marketed as "Covid-19 vaccines."

* 2017 - Major rulemaking by US Department of Health and Human Services

The most recent, major revisions of 42 CFR Parts 70 and 71 occurred through a "final rulemaking" by the Department of Health and Human Services, published in the Federal Register on Jan. 19, 2017 and effective Feb. 17, 2017. (See 6890 Federal Register. Vol. 82, No. 12)

[27] https://www.congress.gov/109/plaws/publ417/PLAW-109publ417.pdf
[28] https://www.phe.gov/Preparedness/legal/Pages/default.aspx
[29] https://www.federalregister.gov/documents/2020/03/17/2020-05484/declaration-under-the-public-readiness-and-emergency-preparedness-act-for-medical- countermeasures
[30] https://s3.documentcloud.org/documents/21206071/brook-jackson-lawsuit.pdf
[31] https://www.govinfo.gov/content/pkg/USCODE-2019-title21/pdf/USCODE-2019-title21-chap9-subchapV-partE-sec360bbb-3.pdf

- 2017-01-19 — Federal Register on HHS Revisions[32] to 42 CFR Parts 70 and 71
- 42 CFR 70 — US Domestic Interstate Quarantine Regulations[33] as revised by HHS in 2017
- 42 CFR 71 — US Foreign Quarantine Regulations[34] as revised by HHS in 2017

Later in 2017, Johns Hopkins University published new biological threat reports, including the SPARS scenario. See: Technologies to Address Global Catastrophic Biological Risks, Johns Hopkins Center for Health Security[35], June 2017 andSPARS Pandemic 2025-2028: A Futuristic Scenario for Public Health Risk Communicators. Johns Hopkins Center for Health Security[36], October 2017. The Federal Register entry reported that some commenters, during the public comment period, requested clarification concerning whether the World Health Organization's (WHO) declaration of a Public Health Emergency of International Concern (PHEIC) could continue to serve as the basis for a ''public health emergency'' if the President or HHS Secretary disagreed with the declaration of a PHEIC on legal, epidemiologic, or policy grounds. Health and Human Services/Centers for Disease Control respondents described such a scenario as "unlikely" and noted that "CDC remains a component of HHS, subject to the authority and supervision of the HHS Secretary and President of the United States."

Another comment addressed the same concern from a slightly different perspective: the commenter "objected to referencing the WHO's declaration of a Public Health Emergency of International Concern (PHEIC) in the definition of public health emergency' because this ostensibly relinquishes U.S. sovereignty."

Again, HHS/CDC respondents said they disagreed with the characterization, stating that US government officials would give consideration to the WHO's declaration of a PHEIC but would "continue to make its own independent decisions regarding when a quarantinable communicable disease may be likely to cause a public health emergency if transmitted to other individuals." A few paragraphs later, the HHS/CDC respondents again said that "it would be unlikely for the United States to formally object to the WHO's declaration of a PHEIC, but that CDC remains a component of HHS, subject to the authority and supervision of the HHS Secretary and President of the United States." Other commenters expressed concern that "any disease considered to be a public health emergency may qualify it as quarantinable" and noted that some PHEICs ''most certainly do not qualify as public health emergencies'' under the proposed definition. HHS/CDC respondents clarified that "only those communicable diseases listed by Executive Order of the President may qualify as quarantinable communicable diseases. For example, Zika virus infection, which although the current epidemic was declared a PHEIC by WHO, is not a quarantinable communicable disease." After dispatching with the comments, the HHS/CDC respondents concluded: "The definition of Public health emergency is finalized as proposed."

[32] https://bailiwicknewsarchives.files.wordpress.com/2022/02/2017-federal-register-re-42-cfr-70-and-71.pdf
[33] https://bailiwicknewsarchives.files.wordpress.com/2022/02/2017-42-cfr-part-70-us-domestic-interstate-quarantine-statute-as-revised-by-hhs-1.pdf [34] https://bailiwicknewsarchives.files.wordpress.com/2022/02/2017-42-cfr-part-71-us-foreign-quarantine-statute-as-revised-by-hhs.pdf
[35] https://bailiwicknewsarchives.files.wordpress.com/2021/12/2017-.06-johns-hopkins-global-pandemic-response-technology.pdf
[36] https://bailiwicknewsarchives.files.wordpress.com/2021/12/2017-.10-spars-pandemic-scenario-johns-hopkins.pdf

Involuntary detention of healthy individuals authorized - *The 42 CFR Section 70 revisions that went into effect in February 2017 authorize the federal government to apprehend American citizens on suspicion of having colds, under §70.6: Apprehension and detention of persons with quarantinable communicable diseases. "(a) The Director may authorize the apprehension, medical examination, quarantine, isolation, or conditional release of any individual for the purpose of preventing the introduction, transmission, and spread of quarantinable communicable diseases, as specified by Executive Order, based upon a finding that: (1) The individual is reasonably believed to be infected with a quarantinable communicable disease in a qualifying stage and is moving or about to move from a State into another State [interstate]; or (2) The individual is reasonably believed to be infected with a quarantinable communicable disease in a qualifying stage and constitutes a probable source of infection to other individuals who may be moving from a State into another State [interstate]. (b) The Director will arrange for adequate food and water, appropriate accommodation, appropriate medical treatment, and means of necessary communication for individuals who are apprehended or held in quarantine or isolation under this part." Under Section §70.5(d) and (e), healthy American citizens can also be involuntarily detained to keep us from travelling intrastate (within a state's borders)*

** Cumulative legal effect of International Health Regulations and implementing national regulations and executive orders*

Cumulatively, these executive and legislative sides of the kill box made it legally possible for President Trump and President Biden, working through the Centers for Disease Control of the Department of Health and Human Services (using the March 13, 2020 PanCAP Adapted U.S. Government Covid-19 Response Plan[37], which threw out all prior guidance on pandemic management), alongside state governors and health secretaries to: 1. place all Americans — including healthy Americans with no symptoms — under home/hospital/nursing home/business/school/military barracks/prison/detention facility arrest; 2. close schools, businesses, churches and government offices; 3. order that healthy Americans wear medical devices (cloth masks) against their will; without personal risk- benefit assessment; without individual clinical diagnoses or evidence of efficacy for infection control, and without a personal physician's prescription; and 4. submittoforcibleinjectionofmRNAandDNAtoxinsonpainoflosingtheirjobsorbeingkickedoutof school.

Explaining the combined effect in the podcast interview[38], Attorney Todd Callender stated: "It allows for, in every instance, a suspension of your human rights, your sovereign rights, your Constitutional rights, charter rights."

[37] https://bailiwicknewsarchives.files.wordpress.com/2021/12/2020.03-hhs-trump-lockdown-order.pdf [38] https://www.americaoutloud.com/compulsory-vaccination-and-forced-quarantine-camps-in-arizona/

This explains, among other things, the refusal of the US Supreme Court, the International Criminal Court, and other federal and state courts around the world to even hear cases challenging democidal[39] Covid-19 population control measures on human rights, constitutional, civil liberties grounds, even while they have heard cases challenging some of those measures on regulatory, procedural grounds, and even decided a few in favor of citizen plaintiffs seeking relief from government "mandates." American federal judges know that — to the extent they accept The Owners' legal framework as legitimate, dispositive and controlling law — the US Constitution is irrelevant. American citizens are legally subordinated to the appointed Director-General of the World Health Organization, his appointed American deputy (the US Secretary of Health and Human Services) and appointed state health secretaries.

** 2013 — US Intellectual Property and Patent Law; Title 35 U.S.C. 101*

Case law, or legal precedents derived from judicial rulings in court cases, form another reinforcing strut of the kill box structure. Callender cited Association for Molecular Pathology v. Myriad Genetics, a 2013 US Supreme Court case. According to the published Supreme Court opinion, Myriad was a company that "obtained several patents after discovering the precise location and sequence of the [human] BRCA1 and BRCA2 genes, mutations of which can dramatically increase the risk of breast and ovarian cancer. This knowledge allowed Myriad to determine the genes' typical nucleotide sequence, which, in turn, enabled it to develop medical tests useful for detecting mutations in these genes in a particular patient to assess the patient's cancer risk. If valid, Myriad's patents would give it the exclusive right to isolate an individual's BRCA1 and BRCA2 genes, and would give Myriad the exclusive right to synthetically create BRCA cDNA."

The Myriad court distinguished naturally-occurring DNA from synthetic or cDNA (complementary DNA): "...One such method begins with an mRNA molecule and uses the natural bonding properties of nucleotides to create a new, synthetic DNA molecule. The result is the inverse of the mRNA's inverse image of the original DNA, with one important distinction: Because the natural creation of mRNA involves splicing that removes introns, the synthetic DNA created from mRNA also contains only the exon sequences. This synthetic DNA created in the laboratory from mRNA is known as complementary DNA (cDNA)." The US federal government intervened in the case[40], through an amicus brief filed by the US Department of Justice, taking the position that "isolated, but otherwise unmodified DNA should not be patent eligible, but that cDNA should be patent eligible." The Myriad court found in favor of the biotech corporation and the federal government, ruling that naturally- occurring DNA is not patentable, but synthetic cDNA is patentable. The Myriad case is the most recent intellectual property case in a line that goes back to a 1980 case called Diamond v. Chakrabarty, 447 U. S. 303.

[39] https://en.wikipedia.org/wiki/Democide
[40] https://www.genome.gov/about-genomics/policy-issues/Intellectual-Property

Chakrabarty was a case about a US patent granted to the inventor of a "human-made, genetically engineered bacterium capable of breaking down crude oil" and upheld by the Supreme Court. "Title 35 U.S.C. 101 provides for the issuance of a patent to a person who invents or discovers "any" new and useful "manufacture" or "composition of matter." Respondent filed a patent application relating to his invention of a human-made, genetically engineered bacterium capable of breaking down crude oil, a property which is possessed by no naturally occurring bacteria. A patent examiner's rejection of the patent application's claims for the new bacteria was affirmed by the Patent Office Board of Appeals on the ground that living things are not patentable subject matter under 101. The Court of Customs and Patent Appeals reversed, concluding that the fact that micro-organisms are alive is without legal significance for purposes of the patent law. Held: A live, human-made micro-organism is patentable subject matter under 101. Respondent's micro- organism constitutes a "manufacture" or "composition of matter" within that statute." The Chakrabarty court highlighted the potential moral hazards of its decision: "[T]he petitioner, with the support of amicus, points to grave risks that may be generated by research endeavors such as respondent's. The briefs present a gruesome parade of horribles. Scientists, among them Nobel laureates, are quoted suggesting that genetic research may pose a serious threat to the human race, or, at the very least, that the dangers are far too substantial to permit such research to proceed apace at this time. We are told that genetic research and related technological developments may spread pollution and disease, that it may result in a loss of genetic diversity, and that its practice may tend to depreciate the value of human life."

But the Chakrabarty court concluded that such moral, ethical and biological risks were beyond its judicial purview; the judges deferred to elected members of Congress for resolution. Between Chakrabarty in 1980 and Myriad in 2013, and since, several court cases involving Monsanto, Dupont, Syngenta and other biotech corporations developed an ownership and licensing paradigm for patented living organisms such as plant seeds and research animals. For example, farmers obtain licenses from biotech corporations to grow and use patented seed lines, but the farmers don't own the seeds. So Monsanto and other companies have successfully prosecuted farmers, and been awarded millions of dollars in fines. Farmers have been prosecuted for saving seeds and replanting them in following growing seasons, for example, and they've been prosecuted for GMO crops that have grown, unlicensed, on their land from seeds blown from nearby, licensed crops. See Seed Giants v. US Farmers report[41], 2013. The result: under international and American intellectual property and patent law, the act of genetic modification results in the modification-device patent holders owning the modified biological subject.

Judicial precedent applicable to human recipients of mRNA/DNA injections

After injection with the mRNA or DNA spike protein instructions, the human body and its cells become "a spike- protein factory," as countless explainer pieces have informed the public since late 2020. Callender believes that because "synthetic genomes are the chattel property, the intellectual property, ofthe patent holders," and because the mRNA and DNA pharmaceutical products marketed by the US government,

[41] https://www.centerforfoodsafety.org/reports/1770/seed-giants-vs-us-farmers

Pfizer/BioNTech, Moderna and Johnson & Johnson alter the DNA in the cells of the recipients to cause the production of spike proteins and make other, as-yet-unknown changes to the human genome, "All the people that got those shots, are now the chattel property of the patent holders of those shots." Combining the 2013 Supreme Court precedent, with the 2021 injection of billions of people with genome- modifying medical devices, The Owners, who gained ownership of physical and financial assets (food supply, water supply, energy supplies, financial systems) starting in the late 1800s, and who added the political assets of national governments, through the militarized public health apparatus put in place between 1990 and 2020, now own a large portion of the world's human assets as well. "Now they actually own our humanity," Callender summarized. Dr. Lee asked about the implications:

"I'm not judging, negatively, the people who chose to get the shot. Because they were manipulated to think they were doing the right thing. They were not given all of this information. They were not given any risk assessments. So they were pawns in the bigger scheme that you are describing, that's been in the plans for a long time."

Callender said control over "what used to be humanity...appears to be limitless" on the vaccinated. "They are not human beings. They are no longer humans for purposes of the law...because willingly, for consideration of the shot, each person became somebody else's property." One of the legal implications relate to potential prosecution of governments and pharmaceutical companies for homicide. However, if a person shoots a dog, Callender said, the shooter can't be prosecuted for homicide, because a dog is not a human and homicide legally refers to the intentional killing of a human being. If — as the Myriad precedent implies — a vaccinated human is legally distinct from a natural, unvaccinated human, and is owned by the pharmaceutical companies rather than owned by him or herself: "Do they enjoy human rights? Do they enjoy protections against homicide? Do they enjoy privacy rights? Do they enjoy any rights at all?" Callender asked. "Short answer is seemingly, No...That's how nefarious and detailed" the plan is.

Taken to the logical conclusion, for however long vaccinated humans are legally-distinct from natural humans, it will be difficult or impossible to prosecute the perpetrators for genocide on behalf of those killed by the injections. The victims, from a legal perspective, are not people and have no natural, God-given or Constitutionally- protected human sovereignty or rights to life or liberty. As of late-February2022, the US Congress has not acted to classify Covid-19-vaccinated humans as fully sovereign individuals or otherwise legislatively protect them from genome-based chattel slavery wrought by intellectual property law.

** 2020 — Clinical Treatment Protocols and Financial Coercion of Hospitals, Doctors and Nurses*

During the Jan. 30 interview, Dr. Lee commented that for her as a practicing physician, a disturbing signal that something was deeply wrong, was the federal public health authorities' official guidance and pressure on doctors, nurses, pharmacists, medical and pharmacist licensing boards, and governors to withhold treatment from sick patients seeking medical help.

The USHHS Centers for Disease Control explicitly directed doctors and nurses to tell mildly sick patients to "go home and get sicker" with no treatments early in the course of the infection, and to only return for care when they could no longer breathe. Lee had never seen that clinical guidance issued for any other illness. "We don't wait until Stage IV cancer," she said. "We screen and treat early." Further, when confronted with new, unknown illnesses, doctors historically have identified potentially life- threatening symptoms, and administered existing medications used to treat those symptoms in other diseases.

Despite the initially-inexplicable federal protocols, as the outbreak spread in February and March 2020, many doctors and nurses started successfully using existing medications to treat the most prominent symptoms experienced by patients infected with the SARS-Covid-2 virus: systemic inflammation, blood clots and secondary bacterial infections. They treated patients with fluids and vitamins, anti-inflammatory drugs, anti-coagulants, antibiotics, and antivirals like hydroxychloroquine and Ivermectin.

Patients treated early recovered. Untreated patients, who went home and waited until they couldn't breathe, came back to hospitals, and were admitted for treatment with Remdesivir and mechanical ventilation, which was — in most cases — too much treatment, much too late. Most of those patients died.

Through the CARES Act, Centers for Medicare and Medicaid Services (CMS)[42] and related funding[43] and liability-immunity mechanisms tied to (International Classification of Diseases) ICD-10-CM diagnosis code U07.1, the federal government added financial and legal pressure on clinicians to withhold care, because reimbursements, add-on payments and liability protections were only made available to providers using the "go home and get sicker" protocol, until patients returned to the hospital.

Once they were extremely sick and arrived at the hospital, they were admitted and classified as Covid-19 patients. Then they were forcibly[44] treated with inappropriate medications (primarily Remdesivir in the United States) and machines (ventilators) that worsened symptoms, because those were the only treatments authorized by the federal government for reimbursement and liability protections.

And then they died, triggering federal death benefit payments[45] to the hospitals and families[46].

[42] https://www.cms.gov/medicare/covid-19/new-covid-19-treatments-add-payment-nctap
[43] https://www.cms.gov/files/document/03052020-medicare-covid-19-fact-sheet.pdf
[44] https://www.cms.gov/files/document/summary-covid-19-emergency-declaration-waivers.pdf
[45] https://fredbrownbill.wordpress.com/2021/12/26/bidens-bounty-on-your-life-hospitals-incentive-payments-for-covid-19-2/
[46]https://www.fema.gov/press-release/20210324/fema-help-pay-funeral-costs-covid-19-related-deaths

At the same time, Lee noted, the emergency measures shut down other revenue streams for hospitals, cancelling diagnostic screenings, surgeries and treatments for non-Covid diseases. By stripping regional hospitals of non- Covid revenue, the federal government has made those hospitals and their medical staff more dependent on the federal funding that incentivizes medical neglect and death protocols.

"So they have created the monstrosity that they then turn around and use as the justification for an emergency. It is diabolical and it's malevolent and people need to know it exists," she said. Meanwhile, the US Food and Drug Administration (FDA) and complicit media demonized the early treatment protocols, repurposed medications and the doctors and nurses who were using them to restore suffering patients to full health. This was done for two reasons: to maintain the fictional yet terrifying emergency narrative that legally-justified FDA emergency use authorization (EUA) for masking devices and mRNA/DNA injection funding and mandates; and to give Covid-19 itself time and space to kill as many people as possible without it appearing to be intentional medical homicide. As of late-February 2022, these federal protocols are still in place, and still killing people.

**2008 - Merger of public health with law enforcement*

Starting around September 2021, Lee, Callender, and other prominent leaders in the loose alliance of doctors and attorneys trying to ensure patient access to early treatments for Covid-19 began to get phone calls every day from alarmed family members of patients in hospitals and nursing homes around the United States who had been tagged on entry with ICD-10 codes triggering Covid-19 treatment protocols. Family members reported that medical staff were withholding fluids, food and vitamins from their loved ones; refusing to administer antibiotics, corticosteroids and anticoagulants; restraining them, forcibly administering Remdesivir, and forcibly hooking them up to ventilators. Hospital and nursing home administrators were also blocking family members from visiting patients, denying power of attorney, refusing to allow visits from priests, pastors and rabbis, and refusing to allow patients to leave the facilities.

A few weeks later, news emerged that Maryland National Guard soldiers and Federal Emergency Management Agency staff were distributing Remdesivir in nursing homes. The soldiers were sent into the nursing homes after hospital and nursing home staff who refused to take mRNA and DNA injections were fired, leading to staffing shortages, capacity overloads, and transfers of patients. Callender emphasized that starvation and battery are criminal acts, but explained that when families called local police for help for their loved ones trying to escape the facilities, police officers generally refused to get involved. In some cases, they arrested the family members who were trying to protect the patients from abuse. Callender described the situation as "murder for hire in the hospitals," adding "everyone is worried about FEMA camps. They already exist. They're called hospitals...Hospitals are now part of the law enforcement system."

Through whistleblowers and research, Callender has since learned that in 2007, the US Department of Justice Bureau of Justice Assistance and the CDC convened a working group to merge public health and law enforcement systems.

The result was a 2008 document called "A framework for improving cross-sector coordination for emergency preparedness and response: Action Steps for Public Health, Law Enforcement, the Judiciary, and Corrections"[47] which: "improved cross-sectoral and cross-jurisdictional collaboration and crafted two other tools: a model Memorandum of Understanding (MOU) for joint investigations of bioterrorism, and a guide for developing MOUs for strengthening coordinated, multi-sector responses to influenza pandemics and other infectious disease threats."

The 2008 plan, combined with frontline reports from distraught families and their own medical and legal work, provided Callender and others with initial answers to the question: "How does the global control paradigm translate from international through national down to the individual?"

Arizona case study

What they found in Cochise County, Arizona and other local jurisdictions, were intergovernmental agreements (IGAs) linking federal funding to declared public health emergencies to require states and counties to establish quarantine facilities and procedures for involuntarily moving people to detention in nursing homes, hospitals or other purpose-built structures, on the basis of government-alleged infection with a quarantinable communicable disease.

State of emergency declarations are a linchpin. Most emergency orders at the national, state and local level are temporary and have built-in expiration dates, although the main PHEIC declaration issued by the WHO General-Director on Jan. 30, 2020 apparently does not. The goal of The Owners, Callender said, is to make sure that emergency executive powers are not temporary, but are permanent. The process is currently underway in Arizona. Under Arizona law, Callender said, the governor can petition a House member and a Senate member asking the legislature to convert the temporary emergency powers to permanent emergency powers. The legal document submitted by the Governor to the legislators is called a report, Callender said, and it's based on an assertion by the Arizona public health department that the Covid-19 emergency itself is permanent.

By late January 2022, when the Callender interview was recorded, a letter had already been submitted by a group claiming to represent 1,200 concerned doctors, advocating that the legislature grant the Governor permanent emergency powers that eliminate the constitutional and human rights held by the people of Arizona. Callender linked the Arizona government acts to the Jan. 13, 2022 US Supreme Court ruling in Biden v. Missouri, regarding the federal government's authority, through the Department of Health and Human Services Centers for Medicare and Medicaid (CMS) financial control of hospital funding, to mandate hospital employees' submission to unwanted mRNA and DNA injections. Callender pointed out that the Supreme Court did not review or rule on the significance of the pharmaceutical products' investigational, experimental, EUA, or gene-modifying medical device status.

47 https://intersector.com/resource/framework-improving-cross-sector-coordination-emergency-preparedness-response/

The court only addressed the relationship between federal funding for hospitals and nursing homes, and the human rights and bodily integrity of employees at federally-funded facilities, and determined that CMS funding is a legal basis for compulsory, invasive, experimental medical treatments.

Linking the Biden v. Missouri Supreme Court ruling, to the 2008 DOJ/CDC document merging public health and law enforcement, to the Cochise County intergovernmental agreements, to the Arizona state government converting the Covid-19 emergency from temporary to permanent, to the US Secretary of Health and Human Services' regulatory and statutory powers to track and trace people through PCR and other testing, to genetic identification catalogs, Callender concluded that it's legally straightforward for a public health official to allege that any individual citizen was in the same room as a person with an allegedly communicable disease, and can therefore be forcibly — and legally — removed by local law enforcement officers from their home or workplace to the local hospital. Once in the hospital, that individual can be tagged with the ICD-10 diagnostic code triggering Covid-19 treatment protocols forcibly administered. "What they want to do is not have anybody interrupt their command and control. Once you're in the public health system, you're in the kill box," Callender said. "All rights are suspended in matters of public health. That's what we can take away from this."

Pennsylvania case study; how the IHR voids constitutional and statutory law and underpins public health martial law.

1978 Emergency Management Services (EMS) Code - *On March 6, 2020, Pennsylvania Governor Tom Wolf (D) and Secretary of Health Rachel Levine declared a statewide state of emergency under the 1978 Emergency Management Services (EMS) Code, 35 Pa.C.S. §§ 7101 et seq. The EMS Code was adopted by the General Assembly in 1978 in response to floods and the Three Mile Island nuclear incident. The EMS Code delegated power from the legislature to the Governor, allowing the Governor to make emergency declarations lasting up to 90 days, renewable by gubernatorial order thereafter.*
Governor Wolf renewed his original proclamation for another 90 days on June 3, 2020, and several times thereafter .

1955 Disease Prevention and Control Law - *Governor Wolf and Secretary Levine primarily cited the 1978 EMS Code, and secondarily cited the 1955 Disease Prevention and Control Law, 35 P.S.A. Section 521.1 et seq.*

By leaning on the 1978 law more than the 1955 law, they sidestepped requirements of the 1955 disease prevention law that limit the government's power to isolate only individual infected persons or animals, and limit the government's power to quarantine only "persons or animals who have been exposed to a communicable disease."

Further, the 1955 law limited the Health Secretary's power to quarantine people only for "a period of time equal to the longest usual incubation period of the disease."

Essays on Teleopolitics by Katherine Watt. State College, Pennsylvania, 2022 19

By citing the 1978 EMS Code as their primary legal authority, Wolf and Levine managed the disaster not as a human health matter affecting millions of morally-autonomous and individually-subjective humans, but as a geographical contamination matter affecting objectified meat-sacks. And they were able to indefinitely extend the length of time for stay-at-home, school/business/church closures and occupancy limits from 14 days (Covid-19 incubation period as it was understood in the early days of the outbreak). That's how they could legally turning "two weeks to flatten the curve" into two years to flatten Pennsylvania's people, schools, businesses and churches. Governor Wolf and Secretary Levine basically created a statewide disaster zone that included every individual person's physical body, every private home and businesses, and every public facility, as if all were objects presumptively under state control and contaminated by a virus, in the same way an area of land or water might be presumptively contaminated by radioactive particles in a nuclear disaster.

Power, checks and balances: executive v. legislative; court-arbitrated; partisan

Under the terms of the 1978 Emergency Management Services Code, the state of emergency could be terminated either by the Governor, or by both houses of the Pennsylvania General Assembly adopting concurrent resolutions. However, when the Republican-majority General Assembly attempted to modify the terms of Governor Wolf's orders through concurrent legislation in Spring 2020, and eventually tried to terminate the emergency declaration through a concurrent resolution, Governor Wolf and Secretary Levine simply ignored the legislation and continued enforcing the executive orders.

The conflict made its way to the Pennsylvania Supreme Court in the Wolf v. Scarnati case, 104 MM 2020, which was decided in Wolf's favor on July 1, 2020. The partisan Democrat judges ruled that concurrent resolutions (outside of three exceptions interpreted narrowly to exclude terminating emergency declarations) must be presented to the Governor's for approval or veto. The Governor, of course, would not approve a resolution bringing his extraordinary emergency powers to an end. This prompted the Republican General Assembly to pass — in two consecutive sessions — resolutions placing a Constitutional amendment on the May 2021 ballot, so that Pennsylvania citizens could amend the state constitution to empower the General Assembly to terminate gubernatorial emergency declarations without presenting the measure to the governor for approval or veto. Pennsylvania voters approved the constitutional amendment in May 2021 and the Republican General Assembly adopted joint resolutions on June 10, 2021, bringing the Pennsylvania state of emergency to a close. Sort of.

Despite the legislature stripping Governor Wolf and his administration of the emergency powers they had assumed in March 2020, the Pennsylvania Acting Secretary of Health continued — after June 2021 — to promulgate and enforce unlawful orders including mask mandates, especially targeting schoolchildren attending Pennsylvania public schools. The Acting Secretary of Health did so under a proposed, novel legal theory that the appointed health secretary's executive powers may be exercised independent of the Pennsylvania and US Constitutions, the citizens of Pennsylvania, the elected Pennsylvania legislature and the elected Pennsylvania governor.

The Secretary of Health's claim to unchecked power became the subject of state court cases, including Corman v. Acting Secretary of Pennsylvania Department of Health[48]. In their Sept. 3, 2021 petition, the Corman case parents argued that the Secretary of Health does not have "statutory or regulatory authority to mandate the wearing of face coverings by teachers, children, students, staff, or visitors working, attending, or visiting a School Entity."

That legal fight was argued in front of the Commonwealth Court (294 MD 2021, oral arguments Oct. 20, 2021) and the mask mandate was ruled "void from the beginning." Short summary of Nov. 10 Commonwealth Court ruling by Sullivan-Simon[49]. Governor Wolf appealed the decision, to the Pennsylvania Supreme Court, where appeal was denied on Dec. 10, 2021, thus upholding the Commonwealth Court ruling. 83 MAP 2021 case documents[50].

The court found the Health Secretary's purported orders void, but only on procedural and regulatory grounds: failure to follow legislatively prescribed public notice procedures. The Pennsylvania judges did not review, address or remedy the governmental stripping of citizens' constitutional, civil and human rights by unilateral edict, without evidentiary fact-finding and without due process. The Pennsylvania Secretary of Education immediately (Dec. 10, 2021) claimed in an email to school districts that the Department of Education and the school boards governing each school district possesses authority — independent of citizens, Constitution, Governor, General Assembly and Secretary of Health — to mandate that schoolchildren wear masks to attend public schools. School boards and municipalities across Pennsylvania have continued to impose and enforce the mandates, using non-statutory, unconstitutional CDC/HHS guidance as their only remaining rationale.

That issue is now the subject of additional litigation brought Feb. 8, 2022 by parents against the Pennsylvania Secretary of Education and school districts that have retained masking orders (49 MD 2022). Federal law in Pennsylvania; US District Judge tries to uphold constitutional liberties; Third Circuit evades the issue. On Feb. 4, 2022, the National File[51] reported that Pennsylvania Lieutenant Governor candidate Teddy Daniels plans to arrest government officials who impose mandates, if Daniels is elected. After reading the National File article, I did some research to update myself about what happened to the federal Butler v. Wolf[52] case (2:20-cv-677), filed by Butler County and several small business plaintiffs on May 7, 2020.

The plaintiffs argued that the business, government, school and church closures and occupancy limits imposed unilaterally by Governor Wolf, among other Covid-19 emergency measures, were unconstitutional government infringements on the rights of the people.

[48] https://s3.documentcloud.org/documents/21055360/9321-petition-for-review-filed.pdf
[49] https://sullivansimon.com/corman-v-acting-secy-of-the-pa-dept-of-health/
[50] https://www.pacourts.us/news-and-statistics/cases-of-public-interest/jacob-doyle-corman-iii-et-al-v-acting-secretary-of-the-pennsylvania-department-of-health [51] https://nationalfile.com/teddy-daniels-vows-arrest-government-officials-enforce-unconstitutional-mandates/
[52] https://bailiwicknews.substack.com/p/butler-v-wolf

US District Court Judge William Stickman IV agreed, and attempted to overturn Gov. Wolf's emergency lockdown orders on constitutional and civil liberties grounds, in a well-written opinion and order filed on Sept. 14, 2020[53].

Judge Stickman's order was immediately stayed by the Third Circuit Court of Appeals, following an appeal by Governor Wolf, leaving the lockdown orders in force. That Third Circuit stay of Stickman's order overturning Wolf's orders — and Governor Wolf's repeated extension of the state of emergency[54] *— helped drive the constitutional amendment proposed by the Pennsylvania legislature, which was put on the ballot in May 2021, approved by voters*[55]*, and cleared the path for the Pennsylvania legislature to end the Covid-19 'state of emergency' in the Commonwealth, which the legislature did in June 2021*[56]*, as noted in the previous section about Pennsylvania state law conflicts.*

In August 2021, the Third Circuit Court of Appeals dismissed the Butler v. Wolf appeal as moot, taking Wolf at his word that the Secretary of Health would not reimpose draconian mandates, but not ruling that such mandates would be unconstitutional. PennRecord reported on that August 2021 Third Circuit ruling[57]*, quoting Judge Kent Jordan: "The Governor's emergency powers have been reduced and the immediate sense of emergency has abated to a large degree, but both in reported public statements and in argument before us,the Wolf administration maintains that dissolving the disaster emergency does not affect a health secretary's disease-prevention authority to issue mask-wearing and stay-at-home orders or shut down schools and nonessential businesses. Whether that position is legally sound is not before us and I make no comment on it. The point is that the defendants-appellants in this case – Gov. Wolf and the Commonwealth's Secretary of Health – have taken that position, so the possibility of future executive orders of the type challenged here is not fanciful. But such orders would have to be just that – in the future – because it is undisputed that the challenged orders have all expired, and a legal remedy aimed at those particular orders is, by definition, impossible." The Butler v. Wolf plaintiffs (counties and business owners) then appealed the Third Circuit ruling to the US Supreme Court, which refused to hear the case. That was reported Jan. 11, 2022 by Max Mitchell in the Legal Intelligencer*[58]*, although the story is behind a paywall so I can't read it in full.*

Pennsylvania case study through broader lens - *This means that the Pennsylvania Secretary of Health can — as of this moment — reinstate any health-related orders at any time, on any pretext, regardless of the Pennsylvania legislature's removal of the Governor's executive power, and without citizen recourse to constitutional liberty protections such as court review. The Pennsylvania Secretary of Health currently has more power than the citizens of Pennsylvania, the Governor, all of the legislators and all of the judges. This aligns with what Attorney Todd Callender has been reporting.*

[53] https://renzlaw.files.wordpress.com/2020/09/pa-butler-v.-wolf1.pdf
[54] https://bailiwicknews.substack.com/p/liberty-v-tyranny-pennsylvania-edition
[55] https://bailiwicknews.substack.com/p/hooray
[56] https://bailiwicknews.substack.com/p/pennsylvania-house-and-senate-have
[57] https://pennrecord.com/stories/606545317-third-circuit-vacates-federal-court-s-ruling-and-declares-suit-over-legality-of-wolf-s-covid-19-measures-is-moot [58] https://www.law.com/thelegalintelligencer/2022/01/11/scotus-rejects-appeal-over-constitutionality-of-pa-s-covid-closures/

So long as a WHO-declared public health emergency of international concern (PHEIC) is in effect, nation-states who have signed on to the 2005 International Health Regulations are legally obligated — presumably under penalty of losing access to the privately-owned Bank of International Settlements financial transaction systems — to suspend and violate the God-given constitutional, civil and human rights of their people, void their constitutions and charters, void their statutory protections, and suspend court review of human rights-based claims.

State and county public health authorities, led by the US Secretary of Health and Human Development, currently have complete legal control of the physical bodies of all the human beings within their jurisdictions. And that federal HHS Secretary delegation of power to state health secretaries and county health departments can and is being backed by county law enforcement personnel. In other words, we are all already living under executive-imposed public health martial law. So long as the United States remains a member of the World Health Organization and a signatory to the International Health Regulations, federal, state and county legislatures and courts are powerless to check or remove the public health officials' power of indefinite, pretextual arrest and detention of any citizen alleged to have asymptomatic colds.

** Ransom demand from World Health Organization to G20*

On February 9, 2022, the World Health Organization announced its ransom demand, seeking $16 billion from high-income nation-states, to fund expanded testing and injections in middle- and low-income countries, to end WHO's "public health emergency of international concern."

WHO wants rich states to contribute to Covid-19 plan. ACT-Accelerator initiative requires $16 billion to end the pandemic.[59] *RT*

"The Access to Covid-19 Tools Accelerator (ACT-A) is the WHO-led initiative that unites leading agencies in a bid to provide middle- and low-income countries with tests, vaccines, protective equipment, and other medical supplies needed to curb the pandemic worldwide. Dr. Tedros Adhanom Ghebreyesus, director-general of the WHO, said the spread of the Omicron variant made it even more urgent to distribute medical supplies equitably around the globe. "If higher-income countries pay their fair share of the ACT-Accelerator costs, the partnership can support low- and middle-income countries to overcome low Covid-19 vaccination levels, weak testing, and medicine shortages. Science gave us the tools to fight Covid-19; if they are shared globally in solidarity, we can end Covid-19 as a global health emergency this year," he stated. The ACT-Accelerator representatives have contacted all high-income countries and upper-middle- income members of the G20. Their "fair share" contributions are calculated individually for each state, taking the private sector and philanthropic institutions into account as well." Director-General Tedros Adhanom Ghebreyesus then explicitly — and falsely — linked low inoculation rates in low-income countries with an increased risk of viral variants capable of threatening highly-injected people in high- income countries.

[59] https://www.rt.com/news/548767-who-act-accelerator-initiative/

"According to the WHO statement, only about 22 million tests, or 0.4% of the total number, were taken in low-income countries; and only 10% of people in these countries have received at least one vaccine dose. "This massive inequity not only costs lives, it also hurts economies and risks the emergence of new, more dangerous variants that could rob current tools of their effectiveness and set even highly vaccinated populations back many months," reported the organization."

Most of the low- and middle-income populations in Africa, Asia and South America who are now targeted for expanded testing, psychological terrorism and inoculations of genetic toxins had far higher rates of early treatment and Covid recovery and far lower rates of Covid-related deaths over the past two years. Those people now have far higher rates of natural immunity and mostly-intact personal immune systems that are coping well with all of the variants that have emerged. Their functional and diverse immune systems are not placing evolutionary pressure on the circulating viruses to evolve into variants that circumvent the spike-protein at the foundation of all the mRNA- and DNA-based injections.

Their outcomes have been far better than the outcomes in wealthier countries with the highest testing, psychological terrorism and inoculation rates, such as Israel, Iceland, the UK, Australia, New Zealand, Denmark, Canada and the United States, where extremely degraded personal immune systems are now so focused on the spike protein that they are more vulnerable to reinfection, struggle more to overcome each reinfection, drive more variant evolutions and are also more susceptible to other infections and cancers. As the infection rates and deaths rise in highly-injected G20 populations, the WHO is blaming those infections and deaths — not on toxic genetic injections destroying the hosts' immune systems — but on the low levels of genetic poisoning in poor countries. WHO is using this framing to further impoverish G20 nations, moving the resources of their people, through their legislatures, into the hands of The Owners, through the Bank of International Settlements. Having held all the countries in the world legally-hostage, under the 2005 International Health Regulations (IHR), since the March 2020 WHO Director-General declaration of "public health emergency of international concern," they are now extending the hostage crisis by demanding $16 billion in ransom money, from developed countries, to be used to expand genocidal testing and inoculations to destroy the health and kill off populations living in middle-income and low-income nation-states.

** World Health Organization now working toward expansion of 2005 International Health Regulations*

An international treaty on pandemic prevention and preparedness[60] (European Council)

On 1 December 2021, the 194 members of the World Health Organization (WHO) reached consensus to kickstart the process to draft and negotiate a convention, agreement or other international instrument under the Constitution of the World Health Organization to strengthen pandemic prevention, preparedness and response.

[60] https://www.consilium.europa.eu/en/policies/coronavirus/pandemic-treaty/

An intergovernmental negotiating body will now be constituted and hold its first meeting by 1 March 2022 (to agree on ways of working and timelines) and its second by 1 August 2022 (to discuss progress on a working draft). It will then deliver a progress report to the 76th World Health Assembly in 2023, with the aim to adopt the instrument by 2024. EU reportedly pushes for new pandemic prevention treaty[61] (RT) - Brussels proposed the launch of negotiations on the new pandemic prevention initiative backed by the World Health Organization in 2021. However, since then the EU has been struggling to get approval from other major countries, notably Brazil, India and the US, which wanted the agreement to be non- binding.

Synopsis[62] (Gab)

...WHO wants member states to sign a new treaty on Covid-19, which expands the 2005 treaty. Once signed by the Minister of Health, the WHO constitution (as per Article 19 of the same) will take precedence over a country's constitution (189 countries have signed the 2005 treaty) during natural disasters or pandemics. Since the definition of pandemic was changed a few years ago, they will be able to impose obedience on any country and impose WHO guidelines on the public, which will be mandatory, not just recommended.

** Conclusion*

I'll write and post analysis and fight-back-better possibilities another day, but until then, here are three things to keep in mind:

1. *God."I am the Lord thy God; thou shalt not have strange gods before Me. "Not power or social status. Not "the science." Not comfort or convenience. Not money. Not the World Health Organization, the World Economic Forum, the Bank of International Settlements, or the Club of Rome. Not David Rockefeller Jr., or Klaus Schwab, or Bill Gates, or Anthony Fauci.*
2. *Biological and chemical warfare acts are legally-distinct from pandemics. They fall under different international treaties. "Thou shalt not kill."*
3. *Fraud voids contracts, including implied'informed consent'contracts and liability shields."Thous haltnot bear false witness."*

Related essays

- *2021.10.13 – Ternaries and Trinities[63]*
- *2021.12.17 – Teleopolitics Plan of Study[64]*
- *2022.01.06 – Mass formation; self-destructive nature of totalitarianism; and the teleopolitical history of Poland[65]*

[61] https://www.rt.com/news/548752-eu-pandemic-prevention-treaty/
[62] https://gab.com/Bdw/posts/107768848169181150
[63] https://bailiwicknewsarchives.files.wordpress.com/2021/12/2021.10.13-ternaries-and-trinities-1.pdf
[64] https://bailiwicknewsarchives.files.wordpress.com/2021/12/2021.12.17-teleopolitics-plan-of-study.pdf
[65] https://bailiwicknewsarchives.files.wordpress.com/2022/01/2022.01.06-mass-formation-and-teleopolitics-poland.pdf

Section Four:

Azar's PREP Act declaration bestowed immunity for liability on developers, manufacturers, distributors and vaccinators, for injuries and deaths caused by vaccines developed, manufactured, distributed and administered under Emergency Use Authorization.

"THE ONLY EXCEPTION IS FOR "WILLFUL MISCONDUCT," *which* ***might*** *apply to* ***Pfizer and Moderna if the clinical trial fraud alleged by whistleblower Brook Jackson[1] can be proved*** *— as Edward Dowd and others are working toward. But it would probably not apply to distributors and injectors who can credibly claim they had no knowledge of the clinical trial fraud."*

INTENT MATTERS – The decades-long, methodical and underhanded, removal of Human Rights and Protections makes it impossible to deny premeditated intent to cause harm, which is also "WILLFUL MISCONDUCT."

"Willful Misconduct" Law and Legal Definition:

Willful misconduct generally means a knowing violation of a reasonable and uniformly enforced rule or policy. It means intentionally doing that which should not be done or intentionally failing to do that which should be done, knowing that injury to a person will probably result or recklessly disregarding the possibility that injury to a person may result.[2]

[1] https://s3.documentcloud.org/documents/21206071/brook-jackson-lawsuit.pdf
[2] https://definitions.uslegal.com/w/willful-misconduct/

"Special Report: Standards of Medical Misconduct: What are they and why are they important?"[3]

April 1, 2008

SPECIAL REPORT

Standards of Medical Misconduct: What are they and why are they important?

*By **William Sullivan, DO, JD, FACEP, FCLM**, Contributing Editor*

*You may hear phrases such as **"gross negligence" and "willful and wanton misconduct"** stated by the media, **but these terms also are important for many health providers in that they can limit liability for providing medical care. While the laws of each state differ, in general, there are several ways in which wrongful actions may be categorized. These classifications, detailed below, include: NEGLIGENCE, GROSS NEGLIGENCE, WILLFUL AND WANTON MISCONDUCT, and INTENTIONAL ACTS.***

Negligence. *Failure to exercise reasonable care is considered "negligence." In the medical malpractice setting, "negligence" is synonymous with "failing to act within the standard of care." A physician who does not act as a reasonably well qualified physician would act under the same or similar circumstances is negligent and may be liable for damages if the physician's negligence caused the patient's injuries. The negligence standard is used for most medical malpractice lawsuits.*

Gross Negligence. Gross negligence is more serious than negligence. Court opinions and legislation provide multiple definitions of the term "gross negligence." These definitions include:

- ***"conduct so reckless as to demonstrate a substantial lack of concern for whether an injury results;"[4]***
- ***"failure to exercise slight care or diligence;"[3] and***

[3] https://www.reliasmedia.com/articles/11130-special-report-standards-of-medical-misconduct-what-are-they-and-why-are-they-important

[4] M.C.L. § 600.2945(d)

[3] *Draney v. Bachman,* 138 *N.J. Super.* 503 (1976)

- ***an "entire want of care which would raise the belief that the act or omission complained of was the result of a conscious indifference to the right or welfare of the person or persons to be affected by it."***[5]

The term "recklessness" is sometimes used in statutory language and seems to equate to "gross negligence." *For example,* ***Florida's Good Samaritan Act*** *defines "reckless disregard" as conduct that a health care provider knew or should have known, at the time such services were rendered,* ***"created an unreasonable risk of injury so as to affect the life or health of another."***[6] *The statute* ***specifically*** *notes that the risk caused must be "substantially greater than that which is necessary to make the conduct negligent." An Illinois court decision also noted that "the difference between reckless misconduct and [negligent conduct] is a difference in the degree of the risk, but this difference of degree is so marked as to amount substantially to a difference in kind."*[7]

Willful and Wanton Misconduct. *Willful and wanton misconduct generally means that someone knew that an injury was likely to result from an action and, despite this knowledge, acted with a conscious disregard toward the safety of another person. Proving willful and wanton misconduct is much more difficult than proving simple negligence or gross negligence (although some courts have held that gross negligence is similar to willful and wanton misconduct).*

Legal definitions of willful and wanton misconduct include the following:

- ***"Actual or deliberate intent to harm" or an "utter indifference to or conscious disregard for ... the safety or property of others."***[8]
- ***"Conscious disregard of another's rights, or with reckless indifference to consequences that the defendant is aware, from his knowledge of existing circumstances and conditions, would probably result from his conduct and cause injury to another."***[9]
- *Willful and wanton negligence, unlike gross or ordinary negligence, requires an actual or constructive consciousness that injury will result from the act or omission.*[10]

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[5] *Burk Royalty Co. v. Walls,* 616 S.W.2d 911 (1981)
[6] Fla. Stat. §768.13 *et seq.*
[7] *Henry L. Burke v. 12 Rothschild's Liquor,* 593 N.E.2d 522 (1992)
[8] *Pfister v. Shusta,* 657 N.E.2d 1013 (1995)
[9] *Harris v. Harman,* 486 S.E.2d 99 (1997)
[10] *Infant C. v. Boy Scouts of America, Inc.,* 391 S.E.2d 322 (1990)

Intentional Acts. *Finally, an intentional act ("tort") is an act of which the outcome is known and the actor wants the outcome to occur. Assault and battery are two examples of intentional torts. The difference between willful and wanton misconduct and intentional actions is sometimes difficult to determine. Intentional acts are those that someone wants to occur, while willful and wanton actions imply that an injury was likely to occur and the person "just didn't care" what would happen.*

One example of an intentional medical tort occurred when an obstetrician carved his initials into a patient's abdomen after delivering her newborn baby.[11] The surgeon knew (or should have known) that the patient would have a scar and intended to cause the scar, as was evidenced by his initials on the patient's abdomen. The hospital and physician in that case settled the lawsuit for a total of $1.75 million.[12]

Applicability. *Public policy favors encouraging people to help others in need. For example, the federal government allows us to write off charitable contributions on our taxes. If the charitable tax deduction was removed, it is likely that fewer people would donate items to charity.*

The same public policy arguments can be made when encouraging people to provide medical care to those in need. Every state has a "Good Samaritan" statute that limits the liability of those who help someone in a medical emergency.[13] Were these statutes not in place, bystanders might reconsider a decision to stop and help others for fear of being sued if they did something "wrong." Similarly, states have statutes that protect "first responders" from liability when they respond to 911 calls and transport patients to the hospital. Were medics and paramedics held responsible for any perceived "negligent act" while attempting to stabilize and transport a patient, fewer people would be willing to provide such care. The ability to receive prompt care would then diminish as fewer and fewer first responders would chose to be subject to liability, and the amount of bad outcomes from the delays in medical care would increase.

However, the protection provided to Good Samaritans and first responders is not absolute. While protected from liability for negligent actions, the statutory protection generally does not apply to care that is considered "willful and wanton." One example of a court decision holding that healthcare providers had engaged in willful and wanton misconduct occurred

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[11] Wong E. Doctor Carved His Initials Into Patient, Lawsuit Says. *The New York Times,* Jan. 22,2000. http://query.nytimes.com/gst/fullpage.html?res=980CE4D6103DF931A15752C0A9669C8B63

[12] Illinois Trial Lawyers Association. Vested interest. Tort Briefs. March/April 2000 issue. http://www.iltla.com/vi-torts-march-april-00.asp

[13] State statutes extending qualified immunity protections to health care professionals who furnish emergency-related health care. October 2007. http://healthyamericans.org/reports/bioterror07/2007StateComparisonTable.pdf

when a patient called 911 complaining of an asthma attack; the patient told the dispatcher that she thought she was "going to die." Paramedics went to the scene, knocked on the door, and then left the scene when no one answered. Later, it was learned that the door was unlocked, that the paramedics violated basic training procedures by not attempting to open the unlocked door, and that the patient inside had indeed died from her asthma attack.[14]

First responders have been sued for delaying intubation;[15] *for performing incorrect intubation (i.e., intubating the esophagus);*[16] *and for administration of D50 into an infiltrated IV line that ultimately resulted in an ulnar nerve injury.*[17] *In each case, the courts held that these errors did not amount to willful and wanton misconduct and were, therefore, nonactionable. In another case, failure to institute prompt fetal monitoring on an assaulted pregnant patient in the emergency department was not considered willful and wanton misconduct, even though the fetus eventually died from undiagnosed abruptio placenta.*[18]

Medical Malpractice. *Many states have realized that the public policy arguments used to protect Good Samaritans and to ensure the availability of prompt medical transport also can be used to help ensure that emergency physicians and on-call physicians continue to remain available. In the current system, specialists may simply refuse to provide on-call coverage for emergency patients rather than to risk massive malpractice judgments for treating patients whom they have never seen before, who may not pay them, who may not be compliant with treatment, and who may never be seen again. Because fewer and fewer specialists are willing to provide on-call coverage, some patients with emergency conditions are having a difficult time finding appropriate care.*

For example, before a medical malpractice plaintiff can prevail in Florida, the plaintiff must prove that the physician's medical care demonstrated "a reckless disregard for the consequences so as to affect the life or health or another."[19]

The statute defines "reckless disregard" as conduct that "would be likely to result in injury so as to affect the life or health of another ..."[20] *One case in which a Florida court held that*

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[14] State statutes extending qualified immunity protections to health care professionals who furnish emergency-related health care. October 2007. http://healthyamericans.org/reports/bioterror07/2007StateComparisonTable.pdf
[15] *American National Bank & Trust Co. v. City of Chicago,* 735 N.E.2d 551 (2000)
[16] *Dunlap v. Young,* 187 S.W.3d 828 (Tex. App., 2006)
[17] *Fagocki v. Algonquin Fire Protection Dist.,* 496 F.3d 623 (7th Cir., 2007)
[18] *Falkowski v. Maurus,* 637 So.2d 522 (1993)
[19] Fla. Stat. §768.13(2)(b)1 (2000)
[20] *State v. Wickstrom,* 405 N.W.2d 1 (1987)

an on-call surgeon engaged in intentional misconduct occurred when a surgeon refused to come to the ED to drain an abscess. During his deposition, the surgeon stated that he felt "insulted" to be called in to drain a small abscess. The abscess was the focus of an infection that resulted in the patient developing toxic shock syndrome that ultimately caused her death.[21] The court held that the plaintiffs in the case were entitled to seek punitive damages against the defendants (punitive damages in Florida are only applicable to intentional misconduct).

Similarly, Georgia law currently requires that malpractice actions arising out of care provided in an emergency department or obstetrical unit must be proven "by clear and convincing evidence that the physician or health care provider's actions showed gross negligence."[22] Georgia Senate Bill 286 is currently pending in the Georgia General Assembly and seeks to amend the Georgia statute to reduce the standard of proof back to ordinary negligence.

Many state statutes also limit noneconomic damages for medical malpractice cases but do not apply those limits if the health care provider engaged in willful or wanton misconduct. Here are some examples.

- *South Carolina statutes limit noneconomic damages in medical malpractice cases to $350,000 against a single health care provider, but those limits do not apply if there has been "willful negligence or misconduct" (§15-32-220).*
- *Alaska statutes limit noneconomic damages to $250,000 or to $400,000 for wrongful death or injuries that are more than 70% disabling; however, those limits do not apply to intentional or reckless acts or omissions (§09.55.549).*
- *Pennsylvania statutes allow awards of punitive damages against health care providers, but only upon proving willful misconduct or reckless disregard (§40.1301.812-A).*

Note that a health care provider's knowledge is an important aspect in determining whether willful and wanton misconduct has occurred.

Placing a hypotensive patient on a nitroglycerin drip might be considered willful and wanton misconduct; however, if the health care provider was a new nurse who thought

[21] *Aleman v. Lifemark Hosps. of Fla., Inc.,* No. 02-04540 CA 30 (Fla., Miami-Dade Cir. Ct. Apr. 18, 2003)
[22] O.C.G.A. § 51-1-29.5

that the nitroglycerin was an antibiotic, the conduct might instead be considered negligent.

Similarly, administering an antibiotic to a patient after being told that the patient has an anaphylactic reaction to that antibiotic might be considered willful and wanton misconduct, while administering the antibiotic might be considered entirely appropriate if the health care provider is told that the patient has no allergies.

– The same principle applies to all Covid shots, for example. I challenge **anyone** to name one single thing that is safe for **everyone.** Since *when* is it appropriate, ***safe***, or ***Ethical***, to *even* ***Suggest*** that a person who has had an *anaphylactic reaction* to a medication continue to receive doses? And worse, with regard to the ***Experimental***, Covid shots, the use CERCION AND THREATS is criminal.

Conclusion. *Some state legislatures have categorized wrongful actions occurring during the medical treatment of patients into different levels of culpability to provide some protection to health care providers. By increasing the standard of proof in medical malpractice to one of willful and wanton misconduct, legislatures make it more difficult to hold health care providers liable for medical malpractice. These statutory protections reinforce the public policy that assuring providers are available to provide medical care is equally if not more important than assuring that medical care is provided "perfectly" under all circumstances. Expert witnesses who testify about the standards of medical practice should thoroughly consider the significant differences between simple negligence and willful and wanton misconduct and should never equate, or even approximate, these two standards.*

Increasing the threshold for malpractice actions against on-call specialists to a standard of "recklessness" is one of the strategies that the American College of Emergency Physicians (ACEP) On-Call Task Force is considering to help ease the crisis in providing on-call care to emergency department patients. States experiencing an on-call crisis may consider whether such a statutory amendment could improve the accessibility of care for its citizens.

HHS Secretary Azar's declaration also rendered contractors like Pfizer, Moderna, nurses and pharmacists, as ***classifiable, in legal terms, as government employees of the Department of Health and Human Services for purposes of the Federal Tort Claims Act*** *and related laws:* ***28 USC 1346(b) and 28 USC 2672.***

The ***Project Bioshield Act of 2004*** *includes provisions specifically addressing how EUAs are to be declared, maintained and terminated, at* ***21 USC 360bbb-3***[23]*, relating to* ***use of "unapproved products" or "unapproved uses of approved products."***

The effect of Azar's ***PREP Act declaration****, through the* ***Project Bioshield Act of 2004****, was to authorize government-funded development, marketing, distribution and deployment, by the contractors (Pfizer, Moderna, hospitals, nursing homes, clinics, pharmacies, nurses, pharmacists, etc.) of the pharmaceutical products marketed as "Covid-19 vaccines."*

2017 - Major rulemaking by US Department of Health and Human Services

The most recent, major revisions of ***42 CFR Parts 70 and 71*** *occurred through a "final rulemaking" by the Department of Health and Human Services, published in the Federal Register on Jan. 19, 2017 and effective Feb. 17, 2017. (*See *6890 Federal Register. Vol. 82, No. 12)*

- ***2017-01-19 — Federal Register***[24] ***on HHS Revisions to 42 CFR Parts 70 and 71***
- ***42 CFR 70***[25] ***— US Domestic Interstate Quarantine Regulations as revised by HHS in 2017***
- ***42 CFR 71***[26] ***— US Foreign Quarantine Regulations as revised by HHS in 2017***

[23] https://www.govinfo.gov/content/pkg/USCODE-2019-title21/pdf/USCODE-2019-title21-chap9-subchapV-partE-sec360bbb-3.pdf
[24] https://bailiwicknewsarchives.files.wordpress.com/2022/02/2017-federal-register-re-42-cfr-70-and-71.pdf
[25] https://bailiwicknewsarchives.files.wordpress.com/2022/02/2017-42-cfr-part-70-us-domestic-interstate-quarantine-statute-as-revised-by-hhs-1.pdf
[26] https://bailiwicknewsarchives.files.wordpress.com/2022/02/2017-42-cfr-part-71-us-foreign-quarantine-statute-as-revised-by-hhs.pdf

*Later in **2017**, **Johns Hopkins University published new biological threat reports**, including the **SPARS scenario**.* See: *Technologies to Address Global Catastrophic Biological Risks, Johns Hopkins Center for Health Security*[27], ***June 2017*** *and SPARS Pandemic 2025-2028: A Futuristic Scenario for Public Health Risk Communicators. Johns Hopkins Center for Health Security,*[28]

October 2017.

John's Hopkins has a lengthy history of 'gatherings,' hosting what are referred to as "Tabletop Exercises." Over several years, these 'exercises' have had an 'uncanny' record of virtually 'predicting' the future. Let's start with the 2017 "Technologies to Address Global Catastrophic Biological Risks" – John's Hopkins Center for Health Security.

sTATeMenT of The pRoBleM

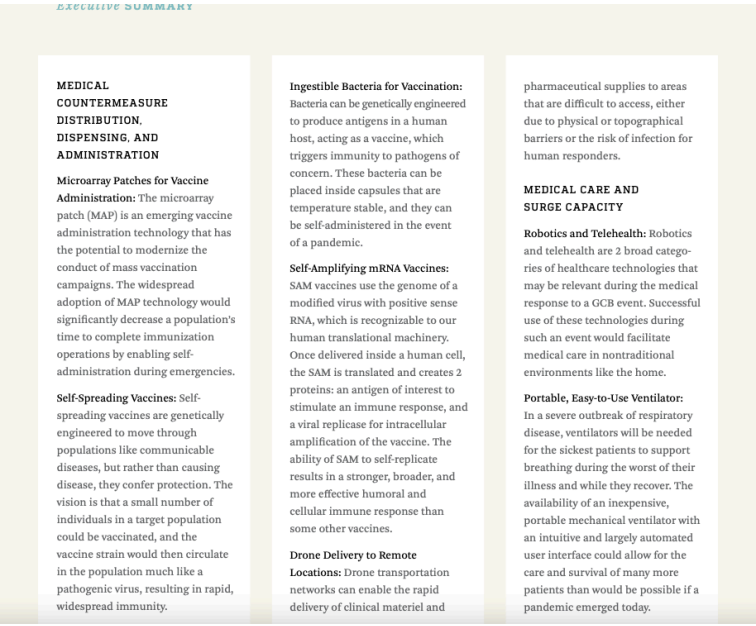
introduction

"Major infectious disease emergencies can arise with little notice and can have serious detrimental and lasting effects on health and society. In the past century, we have seen more than a few global emergencies: the 1918 influenza pandemic, which killed 50-100 million people; the emergence of the deadly SARS and MERS coronaviruses; and the 2013-2016 Ebola epidemic in West Africa, which resulted in more than 28,000 cases and 11,000 deaths and had devastating impacts on that region, as just a few examples. History, too, teaches us about the ravages of new and unknown diseases, from the plague that swept Europe to smallpox and other infectious diseases that devastated the New World. Pathogens continue to emerge and adapt rapidly around the world, and experts expect that there will be a severe, potentially

[27] https://bailiwicknewsarchives.files.wordpress.com/2021/12/2017-.06-johns-hopkins-global-pandemic-response-technology.pdf
[28] https://bailiwicknewsarchives.files.wordpress.com/2021/12/2017-.10-spars-pandemic-scenario-johns-hopkins.pdf

catastrophic pandemic in the future, even if it is difficult to know the specific etiology and timing. **And modern scientific advances—particularly in synthetic biology—wielded by skilled individuals with destructive intentions could result in biological threats that far surpass anything the natural world might produce."**

"Global catastrophic biological risk (GCBR) is a special category of risk involving biological agents—whether naturally emerging or reemerging, deliberately created and released, or laboratory-engineered and escaped— that could lead to sudden, extraordinary, widespread disaster beyond the collective capability of national and international organizations and the private sector to control. If unchecked, GCBRs could lead to events that result in immense suffering, loss of life, and sustained damage to national governments, international relationships, economies, societal stability, and/or global security. A combination of conditions would be the most likely circumstances under which a global catastrophic biological event would emerge. These could potentially include a rapidly spreading and/or highly and quickly lethal biological agent; a significant alteration of biological ecosystems that results in environmental and climate changes; a naïve global population; and concurrent environmental, social, and political circumstances that make response and recovery difficult.



Executive SUMMARY

MEDICAL COUNTERMEASURE DISTRIBUTION, DISPENSING, AND ADMINISTRATION

Microarray Patches for Vaccine Administration: The microarray patch (MAP) is an emerging vaccine administration technology that has the potential to modernize the conduct of mass vaccination campaigns. The widespread adoption of MAP technology would significantly decrease a population's time to complete immunization operations by enabling self-administration during emergencies.

Self-Spreading Vaccines: Self-spreading vaccines are genetically engineered to move through populations like communicable diseases, but rather than causing disease, they confer protection. The vision is that a small number of individuals in a target population could be vaccinated, and the vaccine strain would then circulate in the population much like a pathogenic virus, resulting in rapid, widespread immunity.

Ingestible Bacteria for Vaccination: Bacteria can be genetically engineered to produce antigens in a human host, acting as a vaccine, which triggers immunity to pathogens of concern. These bacteria can be placed inside capsules that are temperature stable, and they can be self-administered in the event of a pandemic.

Self-Amplifying mRNA Vaccines: SAM vaccines use the genome of a modified virus with positive sense RNA, which is recognizable to our human translational machinery. Once delivered inside a human cell, the SAM is translated and creates 2 proteins: an antigen of interest to stimulate an immune response, and a viral replicase for intracellular amplification of the vaccine. The ability of SAM to self-replicate results in a stronger, broader, and more effective humoral and cellular immune response than some other vaccines.

Drone Delivery to Remote Locations: Drone transportation networks can enable the rapid delivery of clinical materiel and pharmaceutical supplies to areas that are difficult to access, either due to physical or topographical barriers or the risk of infection for human responders.

MEDICAL CARE AND SURGE CAPACITY

Robotics and Telehealth: Robotics and telehealth are 2 broad categories of healthcare technologies that may be relevant during the medical response to a GCB event. Successful use of these technologies during such an event would facilitate medical care in nontraditional environments like the home.

Portable, Easy-to-Use Ventilator: In a severe outbreak of respiratory disease, ventilators will be needed for the sickest patients to support breathing during the worst of their illness and while they recover. The availability of an inexpensive, portable mechanical ventilator with an intuitive and largely automated user interface could allow for the care and survival of many more patients than would be possible if a pandemic emerged today.

Keep in mind, this is from 2017

Health Security
Volume 15, Number 4, 2017 Mary Ann Liebert, Inc. DOI: 10.1089/hs.2017.0038

Special Feature - Global Catastrophic Biological Risks

Global Catastrophic Biological Risks: Toward a Working Definition

Monica Schoch-Spana, Anita Cicero, Amesh Adalja, Gigi Gronvall, Tara Kirk Sell, Diane Meyer, Jennifer B. Nuzzo, Sanjana Ravi, Matthew P. Shearer, Eric Toner, Crystal Watson,
Matthew Watson, and Tom Inglesby

"The Johns Hopkins Center for Health Security is working to analyze and deepen scientific dialogue regarding potential global catastrophic biological risks (GCBRs), in a continuation of its mission to reduce the consequences of epidemics and disasters. Because GCBRs constitute an emerging policy concern and area of

practice, we have developed a framework to guide our work. We invited experts from a variety of disciplines to engage with our underlying concepts and assumptions to refine collective thinking on GCBRs and thus advance protections against them.

GCBRs are a subset of global catastrophic risks (GCRs). ***GCRs have been previously defined as events that have the potential to produce tens to hundreds of millions of fatalities, alter the long-term trajectory of humanity, or cause the extinction of humanity as a whole****. While presumed to be of low probability, the consequences would be profound. Interest in understanding and countering GCRs has increased in recent years, because they are perceived as being poorly addressed by national governments or international organizations GCRs could emanate from the natural world but are more commonly thought of as a manmade consequence of powerful technologies.* ***Frequently cited examples of GCRs include nuclear war, climate change, and pandemics of naturally occurring or deliberately engineered pathogens****.*

We see GCBRs as a special category of biological threats that deserve careful study and action to counter them, because of the extraordinary consequences they would have for humanity and because they are potentially tractable. A broadly shared definition and understanding of these risks could help focus collective efforts, direct resources where needed, and communicate more clearly about what these challenges are and how to prevent and respond to them.

The Johns Hopkins Center for Health Security's working definition of global catastrophic biological risks (GCBRs): ***those events in which biological agents—whether naturally emerging or reemerging, deliberately created and released, or laboratory engineered and escaped—could lead to sudden, extraordinary, widespread disaster beyond the collective capability of national and international governments and the private sector to control. If unchecked, GCBRs would lead to great suffering, loss of life, and sustained damage to national governments, international relationships, economies, societal stability, or global security.***[29]

The Federal Register entry reported that some commenters, during the public comment period, requested clarification concerning whether the World Health Organization's (WHO) declaration of a Public Health Emergency of International Concern (PHEIC) could continue to serve as the basis for a ''public health emergency'' if the President or HHS Secretary disagreed with the declaration of a PHEIC on legal, epidemiologic, or policy grounds.

Health and Human Services/Centers for Disease Control respondents described such a scenario as "unlikely" and noted that "CDC remains a component of HHS, subject to the authority and supervision of the HHS Secretary and President of the United States."

Another comment addressed the same concern from a slightly different perspective: the commenter "objected to referencing the WHO's declaration of a Public Health Emergency of

[29] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5576209/pdf/hs.2017.0038.pdf

International Concern (PHEIC) in the definition of public health emergency' because this ostensibly relinquishes U.S. sovereignty."

Again, HHS/CDC respondents said they disagreed with the characterization, stating that US government officials would give consideration to the WHO's declaration of a PHEIC but would "continue to make its own independent decisions regarding when a quarantinable communicable disease may be likely to cause a public health emergency if transmitted to other individuals."

A few paragraphs later, the HHS/CDC respondents again said that "it would be unlikely for the United States to formally object to the WHO's declaration of a PHEIC, but that CDC remains a component of HHS, subject to the authority and supervision of the HHS Secretary and President of the United States."

*Other commenters expressed concern that "*any *disease considered to be a public health emergency may qualify it as quarantinable" and noted that some PHEICs ''most certainly do not qualify as public health emergencies'' under the proposed definition.*

HHS/CDC respondents clarified that "only those communicable diseases listed by Executive Order of the President may qualify as quarantinable communicable diseases. For example, Zika virus infection, which although the current epidemic was declared a PHEIC by WHO, is not a quarantinable communicable disease."

After dispatching with the comments, the HHS/CDC respondents concluded: "The definition of Public health emergency *is finalized as proposed."*

Involuntary detention of healthy individuals authorized

The 42 CFR Section 70 revisions that went into effect in February 2017 authorize the federal government to apprehend American citizens on suspicion of having colds, under §70.6:

Apprehension and detention of persons with quarantinable communicable diseases.

"(a) The Director may authorize the apprehension, medical examination, quarantine, isolation, or conditional release of any individual for the purpose of preventing the introduction,

transmission, and spread of quarantinable communicable diseases, as specified by Executive Order, based upon a finding that:

(1) The individual is reasonably believed to be infected with a quarantinable communicable disease in a qualifying stage and is moving or about to move from a State into another State [interstate]; or

(2) The individual is reasonably believed to be infected with a quarantinable communicable disease in a qualifying stage and constitutes a probable source of infection to other individuals who may be moving from a State into another State [interstate].

(b) The Director will arrange for adequate food and water, appropriate accommodation, appropriate medical treatment, and means of necessary communication for individuals who are apprehended or held in quarantine or isolation under this part."

Under Section §70.5(d) and (e), healthy American citizens can also be involuntarily detained to keep us from travelling intrastate (within a state's borders)

Cumulative legal effect of International Health Regulations and implementing national regulations, statutes, executive orders and declarations.

Cumulatively, these executive and legislative sides of the kill box made it legally possible for President Trump and President Biden, working through the Centers for Disease Control of the Department of Health and Human Services (using the March 13, 2020 PanCAP Adapted U.S. Government Covid-19 Response Plan,[30] which threw out all prior guidance on pandemic management), alongside state governors and health secretaries to:

1. *place all Americans — including healthy Americans with no symptoms — under home/hospital/nursing home/business/school/military barracks/prison/detention facility arrest;*
2. *close schools, businesses, churches and government offices;*

[30] https://bailiwicknewsarchives.files.wordpress.com/2021/12/2020.03-hhs-trump-lockdown-order.pdf

3. *order that healthy Americans wear medical devices (cloth masks) against their will; without personal risk-benefit assessment; without individual clinical diagnoses or evidence of efficacy for infection control, and without a personal physician's prescription; and*
4. *submit to forcible injection of mRNA and DNA toxins on pain of losing their jobs or being kicked out of school.*

Explaining the combined effect in the podcast interview, Attorney Todd Callender stated:

"It allows for, in every instance, a suspension of your human rights, your sovereign rights, your Constitutional rights, charter rights."

This explains, among other things, the refusal of the US Supreme Court, the International Criminal Court, and other federal and state courts around the world to even hear cases challenging democidal[31] Covid-19 population control measures on human rights, constitutional, civil liberties grounds, even while they have heard cases challenging some of those measures on regulatory, procedural grounds, and even decided a few in favor of citizen plaintiffs seeking relief from government "mandates."

American federal judges know that — to the extent they accept The Owners' legal framework as legitimate, dispositive and controlling law — the US Constitution is irrelevant.

American citizens are legally subordinated to the appointed Director-General of the World Health Organization, his appointed American deputy (the US Secretary of Health and Human Services) and appointed state health secretaries.

2013 — US Intellectual Property and Patent Law; Title 35 U.S.C. 101

Case law, or legal precedents derived from judicial rulings in court cases, form another reinforcing strut of the kill box structure.

[31] https://en.wikipedia.org/wiki/Democide

Callender cited Association for Molecular Pathology v. Myriad Genetics[32], a 2013 US Supreme Court case. (539 US 576).

According to the published Supreme Court opinion, Myriad was a company that

"obtained several patents after discovering the precise location and sequence of the [human] BRCA1 and BRCA2 genes, mutations of which can dramatically increase the risk of breast and ovarian cancer. This knowledge allowed Myriad to determine the genes' typical nucleotide sequence, which, in turn, enabled it to develop medical tests useful for detecting mutations in these genes in a particular patient to assess the patient's cancer risk. If valid, Myriad's patents would give it the exclusive right to isolate an individual's BRCA1 and BRCA2 genes, and would give Myriad the exclusive right to synthetically create BRCA cDNA."

The Myriad court distinguished naturally-occurring DNA from synthetic or cDNA (complementary DNA):

"...One such method begins with an mRNA molecule and uses the natural bonding properties of nucleotides to create a new, synthetic DNA molecule. The result is the inverse of the mRNA's inverse image of the original DNA, with one important distinction: Because the natural creation of mRNA involves splicing that removes introns, the synthetic DNA created from mRNA also contains only the exon sequences. This synthetic DNA created in the laboratory from mRNA is known as complementary DNA (cDNA)."

The US federal government intervened in the case[33], through an amicus brief filed by the US Department of Justice, taking the position that "isolated, but otherwise unmodified DNA should not be patent eligible, but that cDNA should be patent eligible."

The Myriad court found in favor of the biotech corporation and the federal government, ruling that naturally-occurring DNA is not patentable, but synthetic cDNA is patentable.

The Myriad case is the most recent intellectual property case in a line that goes back to a 1980 case called Diamond v. Chakrabarty, 447 U. S. 303.

[32] https://supreme.justia.com/cases/federal/us/569/576/
[33] https://www.genome.gov/about-genomics/policy-issues/Intellectual-Property

Chakrabarty was a case about a US patent granted to the inventor of a "human-made, genetically engineered bacterium capable of breaking down crude oil" and upheld by the Supreme Court.

"Title 35 U.S.C. 101 provides for the issuance of a patent to a person who invents or discovers "any" new and useful "manufacture" or "composition of matter." Respondent filed a patent application relating to his invention of a human-made, genetically engineered bacterium capable of breaking down crude oil, a property which is possessed by no naturally occurring bacteria. A patent examiner's rejection of the patent application's claims for the new bacteria was affirmed by the Patent Office Board of Appeals on the ground that living things are not patentable subject matter under 101. The Court of Customs and Patent Appeals reversed, concluding that the fact that micro-organisms are alive is without legal significance for purposes of the patent law.

Held: A live, human-made micro-organism is patentable subject matter under 101. Respondent's micro-organism constitutes a "manufacture" or "composition of matter" within that statute."

The Chakrabarty court highlighted the potential moral hazards of its decision:

"[T]he petitioner, with the support of amicus, points to grave risks that may be generated by research endeavors such as respondent's. The briefs present a gruesome parade of horribles. Scientists, among them Nobel laureates, are quoted suggesting that genetic research may pose a serious threat to the human race, or, at the very least, that the dangers are far too substantial to permit such research to proceed apace at this time. We are told that genetic research and related technological developments may spread pollution and disease, that it may result in a loss of genetic diversity, and that its practice may tend to depreciate the value of human life."

But the Chakrabarty court concluded that such moral, ethical and biological risks were beyond its judicial purview; the judges deferred to elected members of Congress for resolution.

Between Chakrabarty *in 1980 and* Myriad *in 2013, and since, several court cases involving Monsanto, Dupont, Syngenta and other biotech corporations developed an ownership and licensing paradigm for patented living organisms such as plant seeds and research animals.*

For example, farmers obtain licenses from biotech corporations to grow and use patented seed lines, but the farmers don't own the seeds. So Monsanto and other companies have successfully prosecuted farmers, and been awarded millions of dollars in fines. Farmers have been prosecuted for saving seeds and replanting them in following growing seasons, for example, and they've been prosecuted for GMO crops that have grown, unlicensed, on their land from seeds blown from nearby, licensed crops. See *Seed Giants v. US Farmers report*[34]*, 2013.*

The result: under international and American intellectual property and patent law, the act of genetic modification results in the modification-device patent holders owning the modified biological subject.

Judicial precedent applicable to human recipients of mRNA/DNA injections

After injection with the mRNA or DNA spike protein instructions, the human body and its cells become "a spike-protein factory," as countless explainer pieces have informed the public since late 2020.

Callender believes that because "synthetic genomes are the chattel property, the intellectual property, of the patent holders," and because the mRNA and DNA pharmaceutical products marketed by the US government, Pfizer/BioNTech, Moderna and Johnson & Johnson alter the DNA in the cells of the recipients to cause the production of spike proteins and make other, as-yet-unknown changes to the human genome, "All the people that got those shots, are now the chattel property of the patent holders of those shots."

Combining the 2013 Supreme Court precedent, with the 2021 injection of billions of people with genome-modifying medical devices, The Owners, who gained ownership of physical and financial assets (food supply, water supply, energy supplies, financial systems) starting in the late 1800s, and who added the political assets of national governments, through the militarized public health apparatus put in place between 1990 and 2020, now own a large portion of the world's human assets as well.

"Now they actually own our humanity," Callender summarized.

[34] https://www.centerforfoodsafety.org/reports/1770/seed-giants-vs-us-farmers

Dr. Lee asked about the implications:

"I'm not judging, negatively, the people who chose to get the shot. Because they were manipulated to think they were doing the right thing. They were not given all of this information. They were not given any risk assessments. So they were pawns in the bigger scheme that you are describing, that's been in the plans for a long time."

Callender said control over "what used to be humanity…appears to be limitless" on the vaccinated. "They are not human beings. They are no longer humans for purposes of the law...because willingly, for consideration of the shot, each person became somebody else's property."

One of the legal implications relate to potential prosecution of governments and pharmaceutical companies for homicide.

However, if a person shoots a dog, Callender said, the shooter can't be prosecuted for homicide, because a dog is not a human and homicide legally refers to the intentional killing of a human being.

If — as the Myriad *precedent implies — a vaccinated human is legally distinct from a natural, unvaccinated human, and is owned by the pharmaceutical companies rather than owned by him or herself: "Do they enjoy human rights? Do they enjoy protections against homicide? Do they enjoy privacy rights? Do they enjoy any rights at all?" Callender asked. "Short answer is seemingly, No….That's how nefarious and detailed" the plan is.*

Taken to the logical conclusion, for however long vaccinated humans are legally-distinct from natural humans, it will be difficult or impossible to prosecute the perpetrators for genocide on behalf of those killed by the injections. The victims, from a legal perspective, are not people and have no natural, God-given or Constitutionally-protected human sovereignty or rights to life or liberty.

As of late-February 2022, the US Congress had not acted to classify Covid-19-vaccinated humans as fully sovereign individuals or otherwise legislatively protect them from genome-based chattel slavery wrought by intellectual property law.

UPDATE JUNE 2, 2022 *- On Sept. 16, 2011, Congress passed PL 112-29, An act to amend title 35, United States Code, to provide for patent reform*[35].

At Section 33, the statute provided a limitation on 35 USC 101 (the statute interpreted by SCOTUS in Chakrabarty (1980) and Myriad (2013):

(a) Limitation — Notwithstanding any other provision of law, no patent may issue on a claim directed to or encompassing a human organism.

(b) Effective Date.

(1) In general.—Subsection (a) shall apply to any application for patent that is pending on, or filed on or after, the date of the enactment of this Act [Sept. 16, 2011].

(2) Prior applications.—Subsection (a) shall not affect the validity of any patent issued on an application to which paragraph (1) does not apply.

2020 — Clinical Treatment Protocols and Financial Coercion of Hospitals, Doctors and Nurses

During the Jan. 30 interview, Dr. Lee commented that for her as a practicing physician, ***a disturbing signal that something was deeply wrong, was the federal public health authorities' official guidance and pressure on doctors, nurses, pharmacists, medical and pharmacist licensing boards, and governors to withhold treatment from sick patients seeking medical help****.*

The USHHS Centers for Disease Control explicitly directed doctors and nurses to tell mildly sick patients to "go home and get sicker" with no treatments early in the course of the infection, and to only return for care when they could no longer breathe.

Lee had never seen that clinical guidance issued for any other illness.

"We don't wait until Stage IV cancer," she said. "We screen and treat early."

[35] https://uscode.house.gov/statutes/pl/112/29.pdf

Further, when confronted with new, unknown illnesses, doctors historically have identified potentially life-threatening symptoms, and administered existing medications used to treat those symptoms in other diseases.

Despite the initially-inexplicable federal protocols, as the outbreak spread in February and March 2020, many doctors and nurses started successfully using existing medications to treat the most prominent symptoms experienced by patients infected with the SARS-Covid-2 virus: systemic inflammation, blood clots and secondary bacterial infections. They treated patients with fluids and vitamins, anti-inflammatory drugs, anti-coagulants, antibiotics, and antivirals like hydroxychloroquine and Ivermectin.

Patients treated early recovered.

Untreated patients, who went home and waited until they couldn't breathe, came back to hospitals, and were admitted for treatment with Remdesivir and mechanical ventilation, which was — in most cases — too much treatment, much too late.

Most of those patients died.

Through the CARES Act, Centers for Medicare and Medicaid Services (CMS)[36] and related funding[37] and liability-immunity mechanisms tied to (International Classification of Diseases) ICD-10-CM diagnosis code U07.1, the federal government added financial and legal pressure on clinicians to withhold care, because reimbursements, add-on payments and liability protections were only made available to providers using the "go home and get sicker" protocol, until patients returned to the hospital.

Once they were extremely sick and arrived at the hospital, they were admitted and classified as Covid-19 patients. Then they were forcibly[38] treated with inappropriate medications (primarily Remdesivir in the United States) and machines (ventilators) that worsened symptoms, because those were the only treatments authorized by the federal government for reimbursement and liability protections.

[36] https://www.cms.gov/medicare/covid-19/new-covid-19-treatments-add-payment-nctap
[37] https://www.cms.gov/files/document/03052020-medicare-covid-19-fact-sheet.pdf
[38] https://www.cms.gov/files/document/summary-covid-19-emergency-declaration-waivers.pdf

And then they died, triggering federal death benefit payments to the hospitals[39] and families[40].

At the same time, Lee noted, the emergency measures shut down other revenue streams for hospitals, cancelling diagnostic screenings, surgeries and treatments for non-Covid diseases. By stripping regional hospitals of non-Covid revenue, the federal government has made those hospitals and their medical staff more dependent on the federal funding that incentivizes medical neglect and death protocols.

"So they have created the monstrosity that they then turn around and use as the justification for an emergency. It is diabolical and it's malevolent and people need to know it exists," she said.

Meanwhile, the US Food and Drug Administration (FDA) and complicit media demonized the early treatment protocols, repurposed medications and the doctors and nurses who were using them to restore suffering patients to full health.

This was done for two reasons: to maintain the fictional yet terrifying emergency narrative that legally-justified FDA emergency use authorization (EUA) for masking devices and mRNA/DNA injection funding and mandates; and to give Covid-19 itself time and space to kill as many people as possible without it appearing to be intentional medical homicide.

As of late-February 2022, these federal protocols are still in place, and still killing people.

2008 - Merger of public health with law enforcement

Starting around September 2021, Lee, Callender, and other prominent leaders in the loose alliance of doctors and attorneys trying to ensure patient access to early treatments for Covid-19 began to get phone calls every day from alarmed family members of patients in hospitals and nursing homes around the United States who had been tagged on entry with ICD-10 codes triggering Covid-19 treatment protocols.

[39] https://fredbrownbill.wordpress.com/2021/12/26/bidens-bounty-on-your-life-hospitals-incentive-payments-for-covid-19-2/
[40] https://www.fema.gov/press-release/20210324/fema-help-pay-funeral-costs-covid-19-related-deaths

Family members reported that medical staff were withholding fluids, food and vitamins from their loved ones; refusing to administer antibiotics, corticosteroids and anticoagulants; restraining them, forcibly administering Remdesivir, and forcibly hooking them up to ventilators.

Hospital and nursing home administrators were also blocking family members from visiting patients, denying power of attorney, refusing to allow visits from priests, pastors and rabbis, and refusing to allow patients to leave the facilities.

A few weeks later, news emerged that Maryland National Guard soldiers and Federal Emergency Management Agency staff were distributing Remdesivir in nursing homes.

The soldiers were sent into the nursing homes after hospital and nursing home staff who refused to take mRNA and DNA injections were fired, leading to staffing shortages, capacity overloads, and transfers of patients.

Callender emphasized that starvation and battery are criminal acts, but explained that when families called local police for help for their loved ones trying to escape the facilities, police officers generally refused to get involved. In some cases, they arrested the family members who were trying to protect the patients from abuse.

Callender described the situation as "murder for hire in the hospitals," adding "everyone is worried about FEMA camps. They already exist. They're called hospitals...Hospitals are now part of the law enforcement system."

Through whistleblowers and research, Callender has since learned that in 2007, the US Department of Justice Bureau of Justice Assistance and the CDC convened a working group to merge public health and law enforcement systems.

The result was a 2008 document called "A framework for improving cross-sector coordination for emergency preparedness and response: Action Steps for Public Health, Law Enforcement, the Judiciary, and Corrections[41]" which:

[41] https://intersector.com/resource/framework-improving-cross-sector-coordination-emergency-preparedness-response/

"improved cross-sectoral and cross-jurisdictional collaboration and crafted two other tools: a model Memorandum of Understanding (MOU) for joint investigations of bioterrorism, and a guide for developing MOUs for strengthening coordinated, multi-sector responses to influenza pandemics and other infectious disease threats."

The 2008 plan, combined with frontline reports from distraught families and their own medical and legal work, provided Callender and others with initial answers to the question: "How does the global control paradigm translate from international through national down to the individual?"

Section Five:

Implications of 10 USC 2371b, the federal contracting provision cited by Pfizer

Hundreds of millions of Americans and billions of people around the world were forced into a DOD experiment.

Katherine Watt *May 26, 2022*

As reported yesterday, on April 22, 2022, Pfizer filed a motion to dismiss whistleblower Brook Jackson's False Claims Act case[1].

In its motion for dismissal, Pfizer doesn't argue that the clinical trials, for the products marketed by the US government as 'Covid-19 vaccines,' were not fraudulent.

Instead, Pfizer argues that the corporation never had an obligation to conduct sound, non-fraudulent trials under the terms of its Base Agreement[2] *with the US government (Exhibit A to Pfizer's Motion to Dismiss filed 04/22/2022) and the Statement of Work*[3] *(Exhibit 10 to Jackson's Complaint filed 01/08/2021 and her Amended Complaint filed 02/22/2022).*

"Because of pandemic-related exigencies, the agreement was not a standard federal procurement contract, but rather a 'prototype' agreement executed pursuant to 10 U.S.C. § 2371b[.] ...

The [contract's Statement of Work] describes a 'large scale vaccine manufacturing demonstration' that imposes ***no requirements relating to Good Clinical Practices ('GCP') or related FDA regulations****."*

Pfizer further argued:

"The Government's 'actual behavior' here says it all. Both the complaint itself and the public record show the Government has been fully aware of [whistleblower Jackson's] Relator's

[1] https://bailiwicknews.substack.com/p/pfizers-motion-to-dismiss-the-brook?s=w
[2] https://s3.documentcloud.org/documents/22028603/pfizer-base-agreement.pdf
[3] https://www.hhs.gov/sites/default/files/pfizer-inc-covid-19-vaccine-contract.pdf

allegations for nearly two years without withdrawing authorization or stopping payment for Pfizer's vaccine."

This is true. Jackson told the FDA the trials were being conducted in corrupt and illegal ways in September 2020, and the FDA moved ahead anyway.

Jackson told the Department of Justice in January 2021 when filing her original False Claims Act complaint. The DOJ gagged her from speaking publicly, and declined to prosecute Pfizer or its subcontractors.

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10 USC 2371b has been renumbered. It's now 10 USC 4022[4] - Authority of the Department of Defense to carry out certain prototype projects.

Here's where 10 USC 4022 sits under Title 10, Military Law:

Title 10 - Military Law

→ Subtitle A - General Military Law

→ →Part V - Acquisitions

→ → →Subpart E - Research and Engineering

→ → → → Chapter 301 - Research and Engineering Generally

→ → → → → Subchapter II - Agreements

→ → → → → → Section 4022 - Authority of DOD to carry out certain prototype projects

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Subchapter II - Agreements, includes:

[4] https://www.law.cornell.edu/uscode/text/10/4022

- *§ 4021. Research projects: transactions other than contracts and grants*[5]
- *§ 4022. Authority of the Department of Defense to carry out certain prototype projects*[6]
- *§ 4023. Procurement for experimental purposes*[7]
- *§ 4024. Merit-based award of grants for research and development*[8]
- *§ 4025. Prizes for advanced technology achievements*[9]
- *§ 4026. Cooperative research and development agreements under Stevenson-Wydler Technology Innovation Act of 1980*[10]
- *[§ 4027. Disclosure requirements for recipients of research and development funds]*[11]

The first part of 10 USC 4022 explains:

"[T]he Director of the Defense Advanced Research Projects Agency (DARPA), the Secretary of a military department, or any other official designated by the Secretary of Defense may, under the authority of section 4021 of this title[12]*, carry out prototype projects that are directly relevant to enhancing the mission effectiveness of military personnel and the supporting platforms, systems, components, or materials proposed to be acquired or developed by the Department of Defense, or to improvement of platforms, systems, components, or materials in use by the armed forces."*

That's what the SARS-CoV-2 epidemic and the Covid-19 injection program are: a military prototype project.

Related: The US Congress in 1997 pretended to stop unethical US government experimentation on military personnel, while actually expanding the pool of human subjects for DOD experiments to include the military ***and the rest of the American population****, by moving the*

[5] https://www.law.cornell.edu/uscode/text/10/4021
[6] https://www.law.cornell.edu/uscode/text/10/4022
[7] https://www.law.cornell.edu/uscode/text/10/4023
[8] https://www.law.cornell.edu/uscode/text/10/4024
[9] https://www.law.cornell.edu/uscode/text/10/4025
[10] https://www.law.cornell.edu/uscode/text/10/4026
[11] https://www.law.cornell.edu/uscode/text/10/4027
[12] *https://www.law.cornell.edu/uscode/text/10/4022*

experimental programs from the Department of Defense to the Department of Health and Human Services Food and Drug Administration, and then merging HHS with DOD through subsequent legislation.

From the statutory timeline at the ***American Domestic Bioterrorism Program*** *post:*

[https://bailiwicknews.substack.com/p/american-domestic-bioterrorism-program?s=w[13]]

1997 National Defense Authorization Act for FY98 *-* ***PL 105-85[14], 111 Stat. 1915*** *(450 pages). Section 1078,* ***"Restrictions on the use of human subjects for testing of chemical or biological agents," repealed and replaced a 1977 section of 50 USC Chapter 32, the Chemical and Biological Warfare Program***

.

The ***1977 provision (50 USC 1520)*** *had added a requirement that DOD report to Congress about DOD human experimentation programs.*

In 1997, Congress replaced 1520 with 1520a, purportedly to prohibit DOD conducting experiments on soldiers without the individual soldiers informed consent. It was passed by Congress in response to public outrage over injuries and deaths caused by mandated anthrax injections of soldiers during and after the 1991 Gulf War.

However, the authority for federal government experimentation on non-consenting human beings continued; Congress simply transferred the program to the Food Drug and Cosmetics Act, 21 USC 360bbb (see below, passed three days after the NDAA) under declared emergency situations (Emergency Use Authorizations/EUA).

1997 Food and Drug Administration Modernization Act - PL 105-115, 11 Stat. 2296*. (86 pages). Added new section to Federal Food Drug and Cosmetics Act (21 USC 9) to expand access to investigational drugs and devices during emergency situations (21 USC 360bbb). This was the beginning of the Emergency Use Authorization framework that culminated in the federal*

[13] https://bailiwicknews.substack.com/p/american-domestic-bioterrorism-program?s=w

[14] https://www.congress.gov/105/plaws/publ85/PLAW-105publ85.pdf

government's psychological, social and economic coercion program aimed at universal injection of all American citizens with products marketed as Covid-19 vaccines, operational from mid-2020 to the present. https://www.congress.gov/105/plaws/publ115/PLAW-105publ115.pdf[15]

There's much more to dig into here, starting with the history of amendments to 10 USC 4022, and the Pfizer contracts with US government military branches.

Congress passed ***2016 National Defense Authorization Act. PL 114-92, 129 Stat. 893*** ***on 11/25/2015. Section 815 added the 'prototype' contracting language to Title 10, Military Law (10 USC 2371b, later renumbered 10 USC 4021), authorizing Department of Defense to contract with pharmaceutical corporations to conduct otherwise illegal medical experiments on the American and global public without notice or consent. [This paragraph was added 05/27/2022]*** https://www.congress.gov/114/plaws/publ92/PLAW-114publ92.pdf[16]

Also related: One of the factors to be considered by HHS secretary in making determinations about qualified security countermeasures to be purchased, using the DOD Special Reserve Fund, to stock the Strategic National Stockpile of pharmaceuticals, from pharmaceutical corporations is "whether there is a lack of a significant commercial market for the product at the time of procurement, other than as a security countermeasure." 42 USC 247d-6b (c)(5)(B)(iii), as revised by Congress in 2004.

In other words, if no consumers would buy a product under normal commercial circumstances, but the pharmaceutical companies want to sell it, and the US government wants to conduct research and development on its military applications, the HHS Secretary classifies it as a qualified security countermeasure, the pharmaceutical contractor manufactures it, the US government buys it in bulk, and the US government forces the population to take it.

https://bailiwicknews.substack.com/p/implications-of-10-usc-2371b-the[17]

[15] https://www.congress.gov/105/plaws/publ115/PLAW-105publ115.pdf
[16] https://www.congress.gov/114/plaws/publ92/PLAW-114publ92.pdf
[17] https://bailiwicknews.substack.com/p/implications-of-10-usc-2371b-the

"TO WHOM IT MAY CONCERN"

BASE AGREEMENT

BETWEEN

ADVANCED TECHNOLOGY INTERNATIONAL (ATI)
315 SIGMA DRIVE
SUMMERVILLE, SC 29486

AND

Pfizer, Inc.
235 E 42nd St,
New York, NY 10017

MEDICAL CBRN DEFENSE CONSORTIUM (MCDC) BASE AGREEMENT NO.: 2020-532

Authority: MCDC Other Transaction Agreement (OTA) No. W15QKN-16-9-1002 and 10 U.S.C. § 2371b, Section 815 of the 2016 National Defense Authorization Act (NDAA), Public Law (P.L.) 114-92.

Article VII. DISPUTES

Section 7.01 General

For the purposes of this Article, "Parties" means the CMF, the PAH and the Government where collectively identified and "Party" where each entity is individually identified. The Parties shall communicate with one another in good faith and in a timely and cooperative manner when raising issues under this Article.

Section 7.02 Dispute Resolution Procedures

Any disagreement, claim or dispute among the Parties concerning questions of fact or law arising from or in connection with this Agreement and whether or not involving an alleged breach of this Agreement, may be raised only under this Article.

Whenever disputes, disagreements, or misunderstandings arise, the Parties shall attempt to resolve the issue(s) involved by discussion and mutual agreement as soon as practicable. In no event shall a dispute, disagreement or misunderstanding which arose more than three (3) months prior to the notification made under this article constitute the basis for relief under this article unless the ACC-NJ, Center Director for Emerging Technologies, in the interest of justice, waives this requirement.

Failing resolution by mutual agreement, the aggrieved Party shall document the dispute, disagreement, or misunderstanding by notifying the other Party in writing documenting the relevant facts, identifying unresolved issues, specifying the clarification or remedy sought, and documenting the rationale as to why the clarification/remedy is appropriate. Within ten (10) working days after providing notice to the other Party, the aggrieved Party may, in writing, request a decision by the ACC-NJ, Center Director for Emerging Technologies. The other Party shall submit a written position on the matter(s) in dispute within thirty (30) calendar days after being notified that a decision has been requested. The ACC-NJ, Center Director for Emerging Technologies, will conduct a review of the matter(s) in dispute and render a decision in writing within thirty (30) calendar days of receipt of such position. Any such decision is final and binding, unless a Party shall, within thirty (30) calendar days request further review as provided by this article.

If requested within thirty (30) calendar days of the ACC-NJ, Center Director for Emerging Technologies' decision, further review will be conducted by the Chair of the MCDC Executive Committee and the ACC-NJ Associate Director. In the event of a decision, or in absence of a decision within sixty (60) calendar days of referral to the Chair of the MCDC Executive Committee and the ACC-NJ, Associate Director (or such other period as agreed to by the parties), either party may pursue any right or remedy provided by law, including but not limited to the right to seek extraordinary relief under Public Law 85-804. Alternatively, the parties may agree to explore and establish an Alternate Disputes Resolution procedure to resolve this dispute.

Section 7.03 Limitation of Liability and Damages

In no event shall the liability of the MCDC PAH or any other entity performing research activities under a Project Agreement exceed the funding such entity has received for their performance of the specific Project Agreement under which the dispute arises.

No Party shall be liable to any other Party for consequential, punitive, special and incidental damages or other indirect damages, whether arising in contract (including warranty), tort (whether or not arising from the negligence of a Party) or otherwise, except to the extent such damages are caused by a Party's willful misconduct; Notwithstanding the foregoing, claims for contribution toward third-party injury, damage, or loss are not limited, waived, released, or disclaimed.

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[18] https://s3.documentcloud.org/documents/22028603/pfizer-base-agreement.pdf

"TO WHOM IT MAY CONCERN"

DEPARTMENT OF THE ARMY
U.S. ARMY CONTRACTING COMMAND – NEW JERSEY
PICATINNY ARSENAL, NEW JERSEY 07806-5000

REPLY TO
ATTENTION OF

21 July 2020

Army Contracting Command – New Jersey
ACC-NJ, Building 9
Picatinny Arsenal, NJ 07806

SUBJECT: Technical Direction Letter for Medical CRBN Defense Consortium (MCDC), Request for Prototype Proposals (RPP) 20-11, Objective PRE-20-11 for "COVID-19 Pandemic – Large Scale Vaccine Manufacturing Demonstration" (Pfizer, Inc.)

REF: Prizer Request for Technical Direction Letter, RPP 20-11 under OTA W15QKN-16-9-1002 for Objective PRE-20-11, dated 20 July 2020

Advanced Technology International
ATTN: (b) (6), Sr. Contracts Manager
315 Sigma Drive
Summerville, SC 29486

Dear (b) (6),

The Army Contracting Command – New Jersey (ACC-NJ), in supporting the Joint Project Manager – Medical Countermeasure Systems (JPM-MCS), issued MCDC RPP 20-11 on 09 June 2020. Members of the MCDC submitted proposals in accordance with this RPP. The Government received and evaluated all proposal(s) submitted and a Basis of Selection has been executed, selecting Pfizer, Inc. as the awardee. The Government requests that a Firm-Fixed-Price Project Agreement be issued to Pfizer, Inc. to award this proposal under Other Transaction Agreement W15QKN-16-9-1002, to be performed in accordance with the attached Government Statement of Work (SOW).

Based upon the acceptable update of Pfizer, Inc.'s proposal for "COVID-19 Pandemic – Large Scale Vaccine Manufacturing Demonstration" and 1) The Project Agreement Recipient's concurrence with the requirements included in the Government SOW; 2) An acceptable milestone schedule that meets SOW requirements, and; 3) The price proposed that has been analyzed by the Government, you are hereby directed to issue a Project Agreement to Pfizer, Inc. for the subject project. The total project value has been determined fair and reasonable and Pfizer, Inc.'s proposal has been selected IAW the above referenced Basis of Selection.

The total approved cost to the Government for this effort is not to exceed $1,950,097,500.00. The break-out of the costs is as follows: $1,950,000,000.00 to perform project efforts included in the SOW and $97,500.00 for the Consortium Management Firm (CMF) Administrative Cost. The CMF Administrative Cost was approved as a "Special Allocation" for Operation Warp Speed (OWS) Prototype Projects executed under the MCDC OTA. The effort currently has $1,950,097,500.00 of available funding, comprised of $1,950,000,000.00 for the Project Agreement, $67,500.00 for the CMF Special Allocation, and $30,000 for other, non G&A, ATI costs, which will be incurred, tracked,

and invoiced in accordance with Article V of the OTA. The COVID-19 work shall be tracked separately using the funding obligated via modification P00076. In alignment with the special allocation conditions, it is noted that this project has a base period of performance (b) (4) , with a projected completion date of (b) (4) . A customized clause for the special allocation, will be incorporated into the funding modification for this prototype project.

The prime contractor is considered a small business, nontraditional defense contractor, or nonprofit research institution and determined to be providing a significant contribution. The affirmation of business status certifications submitted as part of the proposal are hereby incorporated into the agreement. The contractor shall notify the MCDC CMF of any deviation from the final proposed affirmation of business status certifications that would affect the contributions of the small business, nontraditional defense contractor, or nonprofit research institution as proposed.

In accordance with 10.U.S.C. 2371b(f), and upon a determination that the prototype project for this transaction has been successfully completed, this competitively awarded prototype OTA may result in the award of a follow-on production contract or transaction without the use of competitive procedures.

Points of Contact:

Agreements Specialist:
(b) (6)
E-mail: (b) (6)
Phone: (b) (6)

Agreements Officer:
(b) (6)
E-mail: (b) (6)
Phone: (b) (6)

Regards,

X (b) (6)
(b) (6)
Agreements Officer
Signed by: (b) (6)

Attachments:
Attachment 1: MCDC2011-003 – Pfizer - 7-21-2020
Attachment 2: SOW Appendix 1 Clause for MCDC Consortium Other Transaction Authority Agreements

[19] https://www.hhs.gov/sites/default/files/pfizer-inc-covid-19-vaccine-contract.pdf

Part Six:

Excerpts from:
American Domestic Bioterrorism Program[1]

*"Building the case to prosecute members of Congress, presidents, HHS and DOD secretaries and federal judges for **treason under 18 USC 2381**."*

Katherine Watt Apr 28, 2022 –
Find Katherine's brilliantly written Substacks at:

Research and organizing tool first posted April 28, 2022, subject to ongoing revision as new information comes to light. Last updated March 21, 2023.

OVERVIEW

*"I started looking closely at the legal architecture supporting the Covid national prison **panopticon**[2] on Jan. 30, 2022, after hearing **Attorney Todd Callender's interview**[3] which provided information about the American domestic legal framework; how it fit with the oddly-coordinated pandemic story told by governments worldwide; and how it relates to the World Health Organization International Health Regulations of 2005 at the center."*

Katherine wrote up the interview, listed below:

**Legal Walls - Short Version*[4]
**Legal Walls of the Covid-19 Kill Box; PDF*[5]

Katherine expresses the thoughts and feelings that so many of us, worldwide, have had: "*Prior to that day, I'd spent a lot of time, with increasing confusion and alarm and despair, trying to*

[1] https://substack.com/profile/8540123-katherine-watt

[2] *https://www.ucl.ac.uk/bentham-project/who-was-jeremy-bentham/panopticon*

[3] *https://www.ucl.ac.uk/bentham-project/who-was-jeremy-bentham/panopticon*

[4] https://bailiwicknews.substack.com/p/legal-walls-short-version?s=w

[5] https://bailiwicknewsarchives.files.wordpress.com/2022/05/2022.02.26-legal-walls-of-the-covid19-kill-box.pdf

figure out why the U.S. Constitutional legal system hadn't put a stop to the nonsense as its nonsensicality became obvious to so many people. Why did it continue, with no end in sight, and not even a glimpse of a path to the end?"

She continues, **"*Since then, as I've dug into Callender's analysis following the supporting paper trails, I've learned why, and how."***

"A whole lot of things that once were federal and state crimes and civil rights violations have been legalized by Congress through legislative, statutory revisions to the United States Code, signed by US Presidents, and implemented at the administrative, regulatory level by the Department of Health and Human Services and Department of Defense through the Code of Federal Regulations."

The Author has *I've reported on those findings in small bits and pieces, connecting the laws to court cases, executive orders, guidance documents for industry and researchers, academic papers, intellectual property patents, regulatory amendments, psychological manipulation programs, geopolitical developments and other facts as they've floated across my field of view.*

I think ***the critical decay began around 1983, when the 'public health emergencies' section was added to the 1944 Public Health Service Act, although the 1944 PHSA itself represented an additional militarization of human medicine in the United States***.

Most of the worst laws have been passed since 2000 — just before 9/11 and the US Department of Defense false flag anthrax attacks.

They are listed below, with links to the full text of each law, and a short summary of what I understand about how each one fits into the overall scheme.

The basic goal of the architects, which has been achieved, was to set up legal conditions in which all governing power in the United States could be automatically transferred from the citizens and the three Constitutional branches into the two hands of the Health and Human Services Secretary, effective at the moment the HHS Secretary himself declared a public health emergency, legally transforming free citizens into enslaved subjects.

That happened on ***Jan. 31, 2020, in effect as of Jan. 27, 2020***[6] *through the present day.*

In other words: ***Congress and US Presidents legalized and funded the overthrow of the U.S. Constitution, the U.S. government and the American people, through a massive domestic bioterrorism program relabeled as a public health program, conducted by the HHS Secretary and Secretary of Defense on behalf of the World Health Organization and its financial backers.***

Navigation Tool/Jump To:

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[6] https://www.phe.gov/emergency/news/healthactions/phe/Pages/2019-nCoV.aspx

[7] https://bailiwicknews.substack.com/p/american-domestic-bioterrorism-program#§presidents-theodore-roosevelt-william-howard-taft-woodrow-wilson-warren-harding-calvin-coolidge-herbert-hoover

[8] https://bailiwicknews.substack.com/p/american-domestic-bioterrorism-program#§presidents-herbert-hoover-franklin-d-roosevelt

[9] https://bailiwicknews.substack.com/p/american-domestic-bioterrorism-program#§presidents-franklin-d-roosevelt-harry-s-truman

[10] https://bailiwicknews.substack.com/p/american-domestic-bioterrorism-program#§presidents-harry-truman-dwight-eisenhower

[11] https://bailiwicknews.substack.com/p/american-domestic-bioterrorism-program#§presidents-dwight-eisenhower-john-f-kennedy-lyndon-johnson-richard-nixon

[12] https://bailiwicknews.substack.com/p/american-domestic-bioterrorism-program#§presidents-richard-nixon-gerald-ford-jimmy-carter

[13] https://bailiwicknews.substack.com/p/american-domestic-bioterrorism-program#§presidents-ronald-reagan-george-hw-bush

[14] https://bailiwicknews.substack.com/p/american-domestic-bioterrorism-program#§presidents-george-hw-bush-william-j-clinton

[15] https://bailiwicknews.substack.com/p/american-domestic-bioterrorism-program#§presidents-william-clinton-george-w-bush-barack-h-obama

[16] https://bailiwicknews.substack.com/p/american-domestic-bioterrorism-program#§presidents-barack-h-obama-donald-j-trump

[17] https://bailiwicknews.substack.com/p/american-domestic-bioterrorism-program#§present-presidents-donald-j-trump-joseph-r-biden

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1900-1929 - Presidents Theodore Roosevelt, William Howard Taft, Woodrow Wilson, Warren Harding, Calvin Coolidge, Herbert Hoover

- ***1907 - Treaty at the Hague***[18] *— Convention Respecting the Laws and Customs of War on Land, including Section III, Military Authority Over the Territory of the Hostile State: "Art. 42. Territory is considered occupied when it is actually placed under the authority of the hostile army."*
- ***1909 - Launch of the Round Table Movement***[19]*. "By 1919, the Round Table Movement changed its name to the Royal Institute for International Affairs (aka: Chatham House) with the Round Table name relegated to its geopolitical periodical… in America, where knowledge of the British Empire's subversive role was more widely known, the name "American Institute for International Affairs" was still too delicate. Instead the name Council on Foreign Relations" was chosen and was chartered in 1921."*
- ***1913/12/23 - US Congress and President Wilson passed Federal Reserve Act. PL 63-43, 38 Stat. 251***[20]***. Created Federal Reserve Bank, central banking system in United States. 12 USC Chapter 3***[21]
- ***1921/11/23 - US Congress and President Harding passed Sheppard-Towner Maternity and Infancy Protection Act. PL 67-97, 42 Stat. 224***[22]*. Established status of American-born babies — human beings — as collateral for national debt owed to international bankers; program operated through birth certificates/security bonds filed with state registries of vital statistics. Expired 1929, replaced by 1935 Social Security Act.*

1930-1939 - Presidents Herbert Hoover, Franklin D. Roosevelt

- ***1930/05/17 - Bank for International Settlements formed by intergovernmental agreement****. Designed to and effectively operates outside of all political and governmental controls. Tower of Basel*[23]*, Adam LeBor (2017)*

[18] http://lawofwar.org/hague_iv.htm
[19] https://orientalreview.org/2019/07/06/the-british-roots-of-the-deep-state-how-the-round-table-infiltrated-america/
[20] https://govtrackus.s3.amazonaws.com/legislink/pdf/stat/38/STATUTE-38-Pg251a.pdf
[21] https://www.law.cornell.edu/uscode/text/12/chapter-3
[22] https://govtrackus.s3.amazonaws.com/legislink/pdf/stat/42/STATUTE-42-Pg224.pdf
[23] https://www.adamlebor.com/books/tower_of_basel/

- ***1933/04/05 - President Roosevelt signed Executive Order 6102***[24]*, under state of emergency (Great Depression). Ratified by Congress through House Joint Resolution 192. Forbade the hoarding 'of gold or silver coin or bullion or currency,' confiscated gold held by private individuals, to remove the constraint on the Federal Reserve (1913 Federal Reserve Act) preventing it from increasing the money supply.*
- ***1933/06/05 - Congress passed House Joint Resolution 192***[25]***, ratifying President Roosevelt's Executive Order 6102; declared bankruptcy of US government; suspended gold standard; pledged lives of American people (registered at birth through Social Security program) as collateral/debt slaves to international bankers, against national debt.***
- ***1933/06/12 - London Economic Conference began.*** *Report on Matthew Ehret, Clash of the Two Americas: Open vs. Closed Systems Collide: How Roosevelt Halted Previous Attempts to Implement a New World Order*[26]*.*
- ***1935/08/14 - US Congress and President Roosevelt passed Social Security Act - PL 74-271. 49 Stat. 620***[27]*. Social Security Act governs Medicare and Medicaid, two of the federal authorization and funding pathways through which 'breakthrough' devices and drugs, fast-track products, products eligible for accelerated approval and other FDA-classified products are developed, manufactured and used on humans.* ***Amendments to SSA since 1983 and pending, have expanded/will further expand the novel drug and device/bioweapon classes eligible for fast-tracked federal research and deployment funding within the Medicare/Medicaid programs.***
- ***1938/06/25 - Congress and President Roosevelt passed*** *Federal Food Drug and Cosmetic Act* ***(FDCA). PL 75-717, 52 Stat. 1040***[28]*.* ***Original stated purpose****: "to prohibit the movement in interstate commerce of adulterated and misbranded food, drugs, devices, and cosmetics."* ***Codified at 21 USC 9. By the outbreak of Covid in late 2019, FDCA had been amended by several decades of Congressional acts to become one of the key laws under which the American domestic bioterrorism program is authorized, funded and operated.***

[24] https://www.goldline.com/brochures/
[25] https://freedom-school.com/h-j-r-192.pdf
[26] https://expose-news.com/2022/08/23/how-roosevelt-halted-previous-nwo-attempts/
[27] https://uscode.house.gov/statviewer.htm?volume=49&page=620
[28] https://govtrackus.s3.amazonaws.com/legislink/pdf/stat/52/STATUTE-52-Pg1040a.pdf

- ***1939/09/01 - Globalists launched World War II.***

1940-1949 - Presidents Franklin D. Roosevelt, Harry S. Truman

- ***1944/07/01 - 07/22 - Globalists negotiated Bretton Woods Articles of Agreement***[29] *to establish a centralized global financial and banking system.*
- ***1944/07/01*** *- Congress and President Roosevelt passed* ***Public Health Service Act****(PHSA). PL 78-410, 58 Stat. 682*[30]*. Consolidated, centralized and militarized the American public health system that had developed within several agencies since the Revolution.* ***Codified at 42 USC 201****.*
- ***1945/04/12*** *- President Roosevelt died; President Truman took office.*
- ***1945/07/31*** *- Congress and President* ***Truman passed Bretton Woods Agreement Act, PL 79-171, 59 Stat. 512***[31]*,* ***authorizing President*** *to accept membership in* ***International Monetary Fund and International Bank for Reconstruction and Development****, later known as* ***World Bank****.*
- ***1945/09/02 - Globalists ended World War II.***
- ***1945/10/24 - Globalists established United Nations****.* ***US Congress ratified treaty****.*
- ***1945/11/20 - Globalists began Nuremberg trials****.*
- ***1945/12/27*** *-* ***Bretton Woods Agreement*** *entered into force.*
- ***6***
- ***1945/12/29*** *- Congress and President Truman passed* ***International Organizations Immunities Act, PL 79-291, 59 Stat. 669***[32]***.*** *Corey Lynn report - Laundering with Immunity: The Control Framework*[33]*, Sept. 29, 2022.*
- ***1946/06/11*** *- Congress and President Truman passed* ***Administrative Procedures Act, PL 79-404. 60 Stat. 237***[34]*. Established framework for the administrative state to operate within a de facto executive branch dictatorship, through the "committed to agency discretion" override of both the legislative process and judicial review.* ***Codified at 5 USC 551.***

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[29] https://fraser.stlouisfed.org/files/docs/historical/martin/17_07_19440701.pdf
[30] https://uscode.house.gov/statviewer.htm?volume=58&page=682
[31] https://govtrackus.s3.amazonaws.com/legislink/pdf/stat/59/STATUTE-59-Pg512.pdf
[32] http://archive.ipu.org/finance-e/PL79-291.pdf
[33] https://www.coreysdigs.com/u-s/laundering-with-immunity-the-control-framework-part-1/
[34] https://www.justice.gov/sites/default/files/jmd/legacy/2014/05/01/act-pl79-404.pdf

- ***1946/07/22 -*** *Globalists established the* ***World Health Organization*** *and adopted the WHO Constitution, signed by 61 nations at International Health Conference in New York, to enter into force as of 04/07/1948. WHO Constitution amendments passed by World Health Assembly 02/03/1977 ; 01/20/1980 ; 07/11/1994 ; 09/15/2005.*
- ***1946/10/01 - Globalists concluded Nuremberg trials****.*
- ***1947 National Security Act - 61 Stat. 499. Set up precursors to Federal Emergency Management Agency (FEMA).***
- ***1947/10/30 -*** *Globalists adopted General Agreement on Tariffs and Trade (GATT) treaty.*
- *1948 - UN Universal Declaration of Human Rights, part of International Bill on Human Rights*
- *1948 US Information and Educational Exchange Act (Smith-Mundt). PL 80-402. 62 Stat. 6. Set up programs for US propaganda distribution in foreign countries; limited use of government propaganda on American population. 'Modernized' to authorize domestic propaganda in 01/02/2013 National Defense Authorization Act.*
- *1948/01/01 - General Agreement on Tariffs and Trade (GATT) treaty entered into force.*
- *1948/04/07 - World Health Organization Constitution entered into force.*
- *1948/06/14 - Congress authorized President Truman to accept membership in World Health Organization on behalf of US government. PL 643, 64 Stat. 441. Codified at 22 USC 290*[35]*.*
- *1949/04/04 - US Senate ratified North Atlantic Treaty Organization (NATO) treaty.*
- *1949/06/18 - George Orwell published 1984.*
- *1949/08/24 - NATO treaty entered into force.*
- *1949 - Geneva Conventions*

1950-1959 - Presidents Harry Truman, Dwight Eisenhower.

- *1950/08/08 - Congress and President Truman passed Defense Production Act of 1950*[36]*, PL 81-774, 64 Stat. 798. Authorized federal takeover of private industry during declared war. Invoked in Spring 2020 for Covid-19 lethal injection production.*

[35] https://www.law.cornell.edu/uscode/text/22/290
[36] https://govtrackus.s3.amazonaws.com/legislink/pdf/stat/64/STATUTE-64-Pg798b.pdf

- *1951/05/25 - Globalists adopted first International Sanitary Regulations at theWorld Health Organization World Health Assembly, to enter into force 10/01/1952. International Sanitary Regulations were revised and renamed International Health Regulations in 1969. Revised again 1973, 1981, 2005. Draft revisions under review 2022.*
- *1951 - Globalists adopted UN Convention on the Prevention and Punishment of the Crime of Genocide.*
- *1952/09/14 - Roman Catholic Pope Pius XII presented speech On the Moral Limits of Medical Research and Treatment[37] to First International Congress on Histopathology of the Nervous System. "Insofar as the moral justification of the experiments rests on the mandate of public authority, and therefore on the subordination of the individual to the community, of the individual's welfare to the common welfare, it is based on an erroneous explanation of this principle. It must be noted that, in his personal being, man is not finally ordered to usefulness to society. On the contrary, the community exists for man."*
- *1952/09/27 - President Truman signed Executive Order 10399 establishing the US Surgeon General as the "health administrator" for the World Health Organization on American soil, under 1948 WHO Constitution and 1951 WHO International Sanitary Regulations. 17 Federal Register 8648[38].*
- *1952/10/01 - WHO International Sanitary Regulations of 1951 entered into force in WHO member states.*
- *1953/03/12 - President Eisenhower transmitted Reorganization Plan No. 1 of 1953 to Congress, subordinating US sovereignty to WHO International Sanitary Regulations, to be implemented by Surgeon General through the Department of Health, Education and Welfare (later renamed Health and Human Services). 18 Federal Register 2053[39]. Codified at 42 USC 202.*

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[37] https://www.papalencyclicals.net/pius12/p12psych.htm
[38] https://tile.loc.gov/storage-services/service/ll/fedreg/fr017/fr017191/fr017191.pdf
[39] https://archives.federalregister.gov/issue_slice/1953/4/11/2053-2054.pdf#page=1

1960-1969 - Presidents Dwight Eisenhower, John F. Kennedy, Lyndon Johnson, Richard Nixon

- *1961/01/17 - President Eisenhower delivered Farewell Address[40], warning Americans of the military-industrial-Congressional complex and the "danger that public policy could itself become the captive of a scientific-technological elite."*
- *1962/10/11 - Roman Catholic Pope John XIII convoked Second Vatican Council (Vatican II). Through the council, Satanic globalists expanded and deepened their infiltration to destroy the institutional Catholic Church and weaken Catholic faith around the world[41].*
- *1963/06/30 - Enthronement of Lucifer ceremony[42] coordinated with consecration of Pope Paul VI.*
- *1963/11/22 - President Kennedy assassinated; President Johnson took office.*
- *1964/06 - Globalists adopted the Declaration of Helsinki[43] on ethics of human experimentation, through World Medical Association. Revised seven times since[44]: 1975, 1983, 1989, 1996, 2000, 2008, 2013.*
- *1965/12/08 - Roman Catholic Pope Paul VI concluded Second Vatican Council.*
- *1966/04/25 - President Johnson transmitted Reorganization Plan No. 3 of 1966 to US Congress, transferring US Surgeon General's authorities to Secretary of Health, Education and Welfare department, effective 06/25/1966. 31 Federal Register 8855[45].*
- *1968/04/04 - Assassination of Martin Luther King Jr.*
- *1968/06/06 - Assassination of Robert F. Kennedy.*
- *1968/07/25 - Roman Catholic Pope Paul VI issued papal encyclical Humanae Vitaeon[46] meaning of human life, and Catholic prohibition of abortion and contraception.*
- *1969 - Globalist - WHO International Sanitary Regulations, in effect since 10/01/1952, revised and renamed International Health Regulations. Revised again 1973, 1981, 2005. Draft revisions under review 2022.*

[40] https://web.cs.ucdavis.edu/~rogaway/classes/188/materials/eisenhower.pdf
[41] https://remnantnewspaper.com/web/index.php/articles/item/6086-the-costs-of-catholic-silence-as-the-world-looks-for-answers
[42] https://remnantnewspaper.com/web/index.php/articles/item/5379-the-1963-vatican-enthronement-of-lucifer-a-windswept-house-update
[43] https://www.wma.net/wp-content/uploads/2018/07/DoH-Jun1964.pdf
[44] https://www.wma.net/what-we-do/medical-ethics/declaration-of-helsinki/
[45] https://archives.federalregister.gov/issue_slice/1966/6/25/8851-8855.pdf#page=5
[46] https://www.vatican.va/content/paul-vi/en/encyclicals/documents/hf_p-vi_enc_25071968_humanae-vitae.html

- *1969/06/09 - Dr. Donald MacArthur testified to US Senate hearing on DOD appropriations[47], about development of "new infective microorganisms which could differ in certain important aspects from any known disease-causing organisms. Most important of these is that it might be refractory to the immunological and therapeutic processes upon which we depend to maintain our relative freedom from infectious disease."*
- *1969/11/19 - Congress and President Nixon passed Armed Forces Appropriations Act. PL 91-121, 83 Stat. 209[48]. Section 409 authorized Department of Defense to use human subjects for experiments in chemical and biological weapons, established reporting requirements (DOD reports to Congress) codified at 50 USC 1511(a) and authorized President to suspend informed consent and other provisions during a declared war or national emergency, codified at 50 USC 1515. Congressional reporting requirements amended 1977 and 1982, repealed 1996.*
- *1969/11/25 - President Nixon Statement on Chemical and Biological Defense Policies and Programs[49]*
- *1969/11/30 - New Ordo Missae[50], "liturgical innovation," introduced by Pope Paul VI, breaking the tradition of centuries.*

1970-1979 - Presidents Richard Nixon, Gerald Ford, Jimmy Carter

- *1970 - Globalists, through Club of Rome, published The Predicament of Mankind: Quest for Structured Responses to Growing World-wide Complexities and Uncertainties, A Proposal* [this link is being censored]
- *1970 - Zbigniew Brzezinski published Between Two Ages: America's Role in the Technotronic Era[51]*
- *1970/03/16 - Congress and President Nixon passed An Act to Establish a Commission on Population Growth and the American Future. PL 91-213, 84 Stat. 67[52].*

[47] https://www.indybay.org/newsitems/2002/09/17/1496051.php
[48] https://www.govinfo.gov/content/pkg/STATUTE-83/pdf/STATUTE-83-Pg204.pdf#page=6
[49] https://2001-2009.state.gov/documents/organization/90920.pdf
[50] https://archive.ccwatershed.org/media/pdfs/13/10/14/09-56-20_0.pdf
[51] https://archive.org/details/pdfy-z5FBdAnrFME2m1U4
[52] https://www.govinfo.gov/content/pkg/STATUTE-84/pdf/STATUTE-84-Pg67.pdf#page=1

- *1970/08/15 - Congress and President Nixon passed Economic Stabilization Act of 1970. PL 91-379, 84 Stat. 799[53]. Authorized President to stabilize prices, rents, wages, salaries, interest rates, dividends and similar transfers as part of a general program of price controls within the American domestic goods and labor markets. Used by Nixon in August 1971.*
- *1970/10/26 - Congress and President Nixon passed Legislative Reorganization Act. PL 91-510, 84 Stat. 1140[54].*
- *1970/11/01 - Roman Catholic Archbishop Marcel Lefebvre founded Society of St. Pius X[55] to preserve traditional Catholic teachings in the wake of the Second Vatican Council.*
- *1971 - Globalists, through Henry Kissinger and Klaus Schwab, established the World Economic Forum.*
- *1971 - President Nixon launched the War on Drugs*
- *1971/01 - Six banks in the European Community, under Jacob Rothschild's direction, consolidated into Inter-alpha Group of Banks.*
- *1971/08/15 - President Richard Nixon directed the Treasury Secretary to suspend, with some exceptions, the convertibility of the dollar into gold or other reserve assets, ordering the gold window to be closed such that foreign governments could no longer exchange their dollars for gold, and issued Executive Order 11615 (pursuant to the Economic Stabilization Act of 1970[56]), imposing a 90-day freeze on wages and prices in order to counter inflation.*
- *1971/08 - US Department of Health, Education and Welfare, National Institutes of Health, National Cancer Institute published Special Virus Program, Progress Report 8[57]*
- *1971/12/23 - US Congress and President Nixon passed National Cancer Act. PL 92-216, 85 Stat. 778[58]. Expanded US government bioweapons development and programs under pretext of cancer research.*
- *1972 - Globalists, through Club of Rome, published Limits to Growth[59], expanding on 1970 proposals in Predicament of Mankind.*

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[53] https://www.congress.gov/91/statute/STATUTE-84/STATUTE-84-Pg796.pdf
[54] https://www.govinfo.gov/content/pkg/STATUTE-84/pdf/STATUTE-84-Pg1140.pdf#page=1
[55] https://sspx.org/en/about/history
[56] https://en.wikipedia.org/wiki/Economic_Stabilization_Act_of_1970
[57] https://archive.org/details/1971-us-special-virus-cancer-program-progress-report-8
[58] https://uscode.house.gov/statutes/pl/92/218.pdf
[59] https://www.donellameadows.org/wp-content/userfiles/Limits-to-Growth-digital-scan-version.pdf

- *1972 - Globalists, through Bulletin of the World Health Organization, published two-part series on Virus-associated immunopathology: animal models and implications for human disease, Part 1[60] and Part 2[61], addressing potential of lab-developed viral, communicable bioweapons to cause cancers and other life-limiting autoimmune and immune dysregulation disorders.*
- *1972/04/10 - Globalists opened UN Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction[62] for signing, leaving major loopholes for biological and toxic agents allegedly developed for 'protective' or 'prophylactic' purposes.*
- *1972/08 - US Department of Health, Education and Welfare, National Institutes of Health, National Cancer Institute published Special Virus Program, Progress Report 9[63]*
- *1973 - Trilateral Commission*
- *1973/01/22 - US Supreme Court issued ruling in Roe v. Wade, 410 US 113[64], on abortion, eroding moral status of human beings based on developmental status/age and finding a 'right' to abortion in the US Constitution.*
- *1973/11/07 - Congress passed War Powers Resolution or War Powers Act, over President Richard Nixon's veto. 93-148. 87 Stat. 555[65]. Used by Congress and President George W. Bush in 2001 to establish permanent state of war, through Sept. 18, 2001 AUMF, with no limitations in time, geography, and no legal distinctions between civilians and combatants.*
- *1974/04/01 - Richard Gardner published essay in Foreign Affairs: The Hard Road to World Order[66]. "In short, the 'house of world order' will have to be built from the bottom up rather than from the top down. It will look like a great 'blooming, buzzing confusion,' to use William James' famous description of reality, but an end run around national sovereignty, eroding it piece by piece, will accomplish much more than the old-fashioned frontal assault."*

[60] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2480894/pdf/bullwho00182-0115.pdf
[61] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2480894/pdf/bullwho00182-0115.pdf
[62] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2480896/pdf/bullwho00182-0123.pdf
[63] https://archive.org/details/1972-us-special-virus-cancer-program-progress-report-9
[64] https://supreme.justia.com/cases/federal/us/410/113/
[65] https://www.govinfo.gov/content/pkg/STATUTE-87/pdf/STATUTE-87-Pg555.pdf
[66] https://www.foreignaffairs.com/world/hard-road-world-order

- *1974/04/24 - Secretary of State Henry Kissinger promulgated National Security Study Memorandum 200, Implications of Worldwide Population Growth for U.S. Security and Overseas Interests[67]. NSSM 200 directed Secretary of Defense, Secretary of Agriculture, CIA Director, Deputy Secretary of State and Administrator for US Agency for International Development to study international political and economic implications of population growth and offer possible courses of action for the U.S. The resulting Kissinger Report was sent to President Nixon 12/10/1974.*
- *1974 Disaster Relief Act. PL 93-288. Another statute creating precursors to FEMA.*
- *1974/07/12 - US Congress and President Nixon passed National Research Service Award Act. PL 93-348, 88 Stat. 342[68]. Title II set up a commission to study bioethics and protection of human subjects. Led to 1977 Health, Education and Welfare report and 1979 Belmont Report.*
- *1974/08/09 - President Nixon resigned; Gerald Ford took office.*
- *1974/11/21 - Roman Catholic Archbishop Marcel Lefebvre, founder of Society of Saint Pius X, published 1974 Declaration[69] on modernism and preservation of the Catholic faith against destructive assaults subsequent to Second Vatican Council.*
- *1974/12/10 - Secretary of State Henry Kissinger's National Security Study Memorandum 200 (NSSM 200) study completed as the Kissinger Report[70], establishing global depopulation as US geopolitical strategy.*
- *1974/12/31 - US Congress and President Ford legalized private ownership of gold, reversing 1933 prohibition. PL 93-373.*
- *1975/03/26 - UN Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction[71] entered into force. Codified in US law at 18 USC 175 in 1990. Both the UN convention and the US law left major loopholes for biological and chemical agents developed for 'protective' or 'prophylactic' purposes. World Health Organization, United Nations, World Economic Forum and US government drove the global bioterrorism program through those loopholes, through swine flu/H1N1, AIDS, anthrax, smallpox, MERS, SARS, SARS-CoV-2 and other communicable and injected pathogens.*

[67] https://www.nixonlibrary.gov/sites/default/files/virtuallibrary/documents/nssm/nssm_200.pdf
[68] https://www.govinfo.gov/content/pkg/STATUTE-88/pdf/STATUTE-88-Pg342.pdf
[69] https://sspx.org/en/1974-declaration-of-archbishop-lefebvre
[70] https://pdf.usaid.gov/pdf_docs/PCAAB500.pdf
[71] https://www.un.org/en/genocideprevention/documents/atrocity-crimes/Doc.37_conv%20biological%20weapons.pdf

- *1975/06 - Rockefeller Commission published Report to the President on CIA Activities Within the US[72].*
- *1975/11/26 - President Gerald Ford endorsed the Kissinger Report's depopulation plan through National Security Decision Memorandum 314[73]*
- *1976/01 - Swine influenza/H1N1 outbreak started at Fort Dix[74]; in April, Congress funded a vaccine development/mass vaccination through Merck; in late September injections began. Heart attacks, Guillain-Barre syndrome, deaths and other adverse effects resulted. In December, campaign suspended and never restarted.*
- *1976/03/23 - UN International Covenant on Civil and Political Rights[75] entered into force.*
- *1976/04 - Senator Frank Church Commission published a Report on the Foreign and Military Intelligence Activities of the United States[76] in April 1976. The Church report included, at Chapter 15-F, information about chemical and biological activities, and at Chapter 17, information about "Testing and Use of Chemical and Biological Agents by the Intelligence Community." It reported on Project Chatter, Project Bluebird/Artichoke, MK-ULTRA, MK-NAOMI and other programs through which the US Government conducted experiments on human subjects against their will and to their detriment.*
- *1976/09/14 - Congress and President Ford passed National Emergencies Act - PL 94-412, 90 Stat. 1255[77]. Codified at 50 USC 34. This is one of the key laws cited[78] in George W. Bush's Sept. 14, 2001 Proclamation 7463, Declaration of National Emergency by Reason of Certain Terrorist Attacks and renewed every year since, most recently by Biden in Sept. 2021. It's also one of the laws cited in Donald Trump's March 13, 2020 Proclamation 9994, Declaring a National Emergency Concerning the Novel Coronavirus Disease (COVID–19) Outbreak, renewed every year since, most recently by Biden in Feb. 2022*
- *1977/01/14 - US Department of Health, Education and Welfare published report on informed consent of human subjects of biomedical experiments, 45 CFR 46, Protection of*

[72] https://www.fordlibrarymuseum.gov/library/document/0005/1561495.pdf
[73] https://www.fordlibrarymuseum.gov/library/document/0310/nsdm314.pdf
[74] https://en.wikipedia.org/wiki/1976_swine_flu_outbreak
[75] https://www.ohchr.org/sites/default/files/ccpr.pdf
[76]https://upload.wikimedia.org/wikipedia/commons/7/79/Church_Committee_report_%28Book_I%2C_Foreign_and_Military_Intelligence%29.pdf
[77] https://uscode.house.gov/statutes/pl/94/412.pdf
[78] https://uscode.house.gov/view.xhtml?path=/prelim@title50/chapter34&edition=prelim

Human Subjects: Research Involving Prisoners and Notice of Report and Recommendations of the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, in compliance with 1974 National Research Service Award Act. 42 Federal Register 3076[79].

- *1977/07/30 - Congress and President Carter passed Department of Defense Appropriations Authorization Act of 1978. PL 95-79, 91 Stat. 323[80]. Section 808 addressed DOD use of military personnel as research subjects for biological and chemical weapons under 1969 law, codified at 50 USC 1520; required notice to be given to local officials before subjecting civilian populations to chemical and biological weapons tests; required DOD reporting to Congress. The provision on DOD reporting to Congress was amended in 1982 and repealed in 1996. Other provisions of the law were amended in 1997 to expand experimentation on military personnel, through the NDAA for FY1998 at Section 1078 and the Emergency Use Authorization provisions of the 1997 Food and Drug Administration Modernization Act at Section 402.*
- *1979/04/18 - National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research published the Belmont Report[81] on ethics of human subjects research, in compliance with 1974 National Research Service Award Act and informed by 1977 HEW report and recommendations.*
- *1979/10/17 - Congress and President Carter passed Department of Education Organization Act. PL 96-88, 93 Stat. 668[82]. Section 509 redesignated the US Health, Education and Welfare Department as the Health and Human Services Department. From that point to the present, the Secretary of Health and Human Services has exercised authorities under the WHO Constitution and WHO International Health Regulations, as transferred from Surgeon General to HEW Secretary in 1966.*

1980-1989 - Presidents Ronald Reagan, George H.W. Bush. 16

- *1980 Comprehensive Environmental Response, Compensation and Liability Act. PL 96-510, 94 Stat. 2767. Superfund Act. Set up federal programs for cleanup of toxic chemical dumpsites.*

[79] https://archives.federalregister.gov/issue_slice/1977/1/14/3048-3089.pdf
[80] https://www.congress.gov/95/statute/STATUTE-91/STATUTE-91-Pg323.pdf
[81] https://www.hhs.gov/ohrp/sites/default/files/the-belmont-report-508c_FINAL.pdf
[82] https://www.govinfo.gov/content/pkg/STATUTE-93/pdf/STATUTE-93-Pg668.pdf

- *1980/06/16 - US Supreme Court ruling in Diamond v. Chakrabharty, 447 US 303[83]. Held: A live, human-made micro-organism is patentable subject matter under 35 USC 101.*
- *1981/06/01 - HHS-Food and Drug Administration Final Rule Protections for Human Subjects; Prisoners Used as Subjects in Research, 21 CFR 50, implementing 1979 recommendations of National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, went into effect. 45 Federal Register 36386[84]*
- *1981/07/27 - HHS-FDA Final Rule Protection of Human Subjects; Informed Consent (21 CFR 50.20) and Protection of Human Subjects; Standards for Institutional Review Boards for Clinical Investigations (21 CFR 56.101) went into effect. 46 Federal Register 8942[85]. Both were amended many times thereafter.*
- *1982 - Roussel-Uclaf developed RU-486/mifepristone chemical abortion pill. Approved by US FDA in Sept. 2000.*
- *1982/12/21 - Congress and President Reagan passed Congressional Reports Elimination Act. PL 97-375, 96 Stat. 1822[86]. Section 203(a) amended requirements for DOD report to Congress on use of human subjects in chemical and biological weapons research under 50 USC 1511(a). Reporting requirement repealed by Congress, 02/10/1996, PL 104-106 at Section 1061(k).*
- *1983/07/13 - Congress and President Reagan passed Public Health Service Act Amendment. PL 98-49, 97 Stat. 245[87]. Section 319 amended Public Health Service Act to add a 'Public Health Emergencies' program, granting new powers to Health and Human Services Secretary and establishing a $30 million slush fund called the Public Health Emergencies Fund. Codified at 42 USC 247d. Summary posted April 20, 2022[88].*
- *1983/12/22 - President Reagan signed Executive Order 12452, listing communicable diseases subjecting citizens to forcible apprehension and detention under Health and Human Services Secretary's quarantine authority through PHSA, 42 USC 264b[89], including "Cholera or suspected Cholera, Diphtheria, infectious Tuberculosis, Plague,*

[83] https://supreme.justia.com/cases/federal/us/447/303/
[84] https://archives.federalregister.gov/issue_slice/1980/5/30/36375-36392.pdf#page=12
[85] https://archives.federalregister.gov/issue_slice/1981/1/27/8921-8944.pdf#page=8
[86] https://www.congress.gov/97/statute/STATUTE-96/STATUTE-96-Pg1819.pdf
[87] https://uscode.house.gov/statutes/pl/98/49.pdf
[88] https://bailiwicknews.substack.com/p/1983?s=w
[89] https://www.law.cornell.edu/uscode/text/42/264

suspected Smallpox, Yellow Fever, and suspected Viral Hemorrhagic Fevers (Lassa, Marburg, Ebola, Congo-Crimean, and others not yet isolated or named)." 48 Federal Register 56927[90]

- *1985/11/20 - Congress and President Reagan passed Health Research Extension Act. PL 99-158, 99 Stat. 877*[91]*. Section 498 prohibited HHS from funding or conducting fetal tissue research for three years. Codified at 42 USC 299g.*
- *1986/03/29 - Robert Strecker delivered to Congress and published report on AIDS outbreak: This Is a Bioattack Alert*[92]*. Report connected US government cancer virus research to virus-induced immune system disorders and cancer in AIDS patients.*
- *1986/07/13 - Congress and President Reagan passed Superfund Amendments and Reauthorization Act. PL 99-499, 100 Stat. 1613*[93]*. Title III, Emergency Planning and Community Right to Know Act related to toxic chemicals and federal government authority.*
- *1986/08/27 - Roman Catholic Archbishop Marcel Lefebvre published Letter to 8 Cardinals Regarding the Assisi Affair*[94]*, addressing dangers to the Catholic faith presented by Pope John Paul II's planned Interfaith Peace Service.*
- *1986/09/18 - Roman Catholic Pope John Paul II conducted multi-religious Interfaith Peace Service in Assisi, Italy.*
- *1986/11/14 - Congress and President Reagan passed State Comprehensive Mental Health Services Plan Act - PL 99-660, 100 Stat 3743*[95]*. Title III, National Childhood Vaccine Injury Act, amended Public Health Service Act to establish and fund a National Vaccine Program; grant vaccine manufactures legal immunity for injuries and deaths caused by their products; establish and fund a tax revenue/debt-funded National Vaccine Injury Compensation Program. Codified at 42 USC 300aa.*
- *1986/12/02 - Roman Catholic Archbishop Marcel Lefebvre and Bishop Antonio de Castro Mayer published Joint Declaration Against Assisi*[96]*, again deploring the*

[90] https://archives.federalregister.gov/issue_slice/1983/12/27/56927-56930.pdf#page=1
[91] https://www.govinfo.gov/content/pkg/STATUTE-99/pdf/STATUTE-99-Pg820.pdf#page=60
[92] https://archive.org/details/thisisabioattackalert/Original%20This%20Is%20A%20Bio-Attack%20Alert-March%2028%2C%201986/
[93] https://www.congress.gov/99/statute/STATUTE-100/STATUTE-100-Pg1613.pdf
[94] https://fsspx.news/en/news-events/news/letter-archbishop-lefebvre-eight-cardinals-august-27-1986-66065
[95] https://www.congress.gov/99/statute/STATUTE-100/STATUTE-100-Pg3743.pdf
[96] https://sspx.org/en/1986-joint-declaration-against-assisi

weakening of the Catholic faith by Vatican leaders under the influence of the Second Vatican Council.

- *1987/06/27 - UN Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment[97], drafted in 1984, signed 1985, entered into force.*
- *1988/11/04 - Congress and President Reagan passed Genocide Convention Implementation Act of 1987, PL 100-606, 102 Stat. 3045[98], to implement the International Convention on the Prevention and Punishment of Genocide. Codified at 18 USC 1091.*
- *1988/11/04 - Congress and President Reagan passed Health Omnibus Programs Extension Act. PL 100-607, 102 Stat. 3048[99]. Section 105 established National Center for Biotechnology Information under Public Health Service Act (42 USC 286c). Section 156 extended fetal tissue research moratorium imposed in 1985 for two more years. Section 201 outlined and funded HIV-AIDS research under direction of NIH/NIAID/Fauci (42 USC 300cc). Section 256 increased funding for the Public Health Emergencies Fund to $45 million (42 USC 247d).*
- *1988/11/23 - Congress and President Reagan passed Robert T. Stafford Disaster Relief and Emergency Act. PL 100-707, 100 Stat. 4689[100]. Amended 1974 Disaster Relief Act, FEMA law; redefined 'emergency' and 'major disaster;' established procedures for Presidential disaster and emergency declarations, DOD domestic deployment of military and more. Codified at 42 USC 5121.*
- *1989/12/19 - Congress and President George H.W. Bush passed Omnibus Budget Reconciliation Act. PL 101-239, 103 Stat. 2106[101]. Section 6601 amended Vaccine Injury Compensation Program, set up special master program. 18*

1990-1999 - Presidents George H.W. Bush, William J. Clinton

- *1990/05/22 - Congress and President Bush passed Biological Weapons Antiterrorism Act of 1989. PL 101-298, 104 Stat. 201[102]. Drafted by Francis Boyle to bring US into compliance with 1975 UN convention. Establishing as criminal, acts of those who*

[97] https://www.ohchr.org/sites/default/files/cat.pdf
[98] https://www.govinfo.gov/content/pkg/STATUTE-102/pdf/STATUTE-102-Pg3045.pdf#page=3
[99] https://www.congress.gov/100/statute/STATUTE-102/STATUTE-102-Pg3048.pdf
[100] https://www.congress.gov/100/statute/STATUTE-102/STATUTE-102-Pg4689.pdf
[101] https://www.govinfo.gov/content/pkg/STATUTE-103/pdf/STATUTE-103-Pg2106.pdf
[102] https://uscode.house.gov/statutes/pl/101/298.pdf

"knowingly develops, produces, stockpiles, transfers, acquires, retains, or possesses any biological agent, toxin, or delivery system for use as a weapon, or knowingly assists a foreign state or any organization to do so," and defined 'for use as a weapon' to "not include the development, production, transfer, acquisition, retention, or possession of any biological agent, toxin, or delivery system for prophylactic, protective, or other peaceful purposes." Codified at 18 USC 175.

- *1990/12/21 - HHS Interim Final Rule: Informed Consent for Human Drugs and Biologics; Determination that Informed Consent is Not Feasible - 55 Federal Register 52814*[103]
- *1991 Common Rule*[104] *governing research on human subjects.*
- *1992/06/03 - United Nations opened UN Conference on Environment and Development, commonly called the Earth Summit, in Rio de Janeiro, Brazil.*

  179 participating nations adopted Agenda 21 (later renamed Agenda 30)[105]*, laying out plans for depopulation, elimination of private property, and elimination of borders and national sovereignty. Implicitly defined living human beings as biological weapons of mass destruction, against which lethal chemical and biological agents could be construed as 'protective' and 'prophylactic' and therefore exempt from 1975 UN Convention on Prohibition of Biological Weapons. UN Framework Convention on Climate Change opened for nation-state signatories to sign.*

- *1992/07/10 - Congress and President Bush passed Alcohol, Drug Abuse, Mental Health Administration (ADAMHA) Restructuring Act. PL 102-321, 106 Stat. 323*[106]*. Expanded drug abuse prevention and treatment programs; reorganized HHS subdivisions. 19*
- *1992/10/27 - Congress and President Bush passed Preventative Health Amendments. PL 102-531, 106 Stat. 3504*[107]*. Changed name from Centers for Disease Control to Centers for Disease Control and Prevention.*

[103] https://www.govinfo.gov/content/pkg/FR-1990-12-21/pdf/FR-1990-12-21.pdf
[104] https://www.hhs.gov/ohrp/regulations-and-policy/regulations/common-rule/index.html
[105] https://grist.org/politics/agenda-21-everything-you-need-to-know-about-the-secret-u-n-plot-in-one-comic/
[106] https://www.congress.gov/102/statute/STATUTE-106/STATUTE-106-Pg323.pdf
[107] https://www.congress.gov/102/statute/STATUTE-106/STATUTE-106-Pg3469.pdf

- *1993/06/10 - Congress and President Clinton passed National Institutes of Health Revitalization Act, PL 103-43, 107 Stat. 122[108]. Reorganized and expanded research programs; reversed moratorium on fetal tissue research.*
- *1993/11/16 - Congress and President Clinton passed Religious Freedom Restoration Act. PL 103-141, 107 Stat. 1488[109]. Affirmed Constitutional protections for free exercise of religion under First Amendment. Related to military personnel requests for religious exemptions from vaccine mandates, not accepted by DOD. Codified at 42 USC 2000bb.*
- *1993/11/30 - Congress and President Clinton passed NDAA for FY1994, PL 103-160, 107 Stat. 1547[110]. Section 1703 related to DOD reporting to Congress on chemical and biological weapons testing programs. Codified at 50 USC 1523. Amended 11/18/1997 and 10/17/2006. Repealed 12/23/2016, effective 12/31/202, Also authorized DOD to "enter into agreements with Secretary of HHS to provide support for vaccination programs...in the US through use of the excess peacetime biological weapons defense capability of the DOD." Codified at 50 USC 1524.*
- *1994/03/21 - United Nations Framework Convention on Climate Change[111] entered into force.*
- *1994/09/05 - United Nations opened the International Conference on Population and Development in Cairo, Egypt. 179 nation-states signed on to a 20-year Programme of Action for depopulation, which was extended in 2010 to cover 2014-2034[112].*
- *1994/09/13 - Congress and President Clinton passed Violent Crime Control and Law Enforcement Act (Clinton Crime Bill). PL 103-322, 108 Stat. 1796[113]. Expanded American prison state, by expanding predicates for incarcerating nonviolent civilians for long sentences, increasing funding for prison construction/operation, and law enforcement officers.*
- *1994/12/08 - Rockefeller Senate Report on US government chemical and biological weapons research, development, testing and deployment programs. S.Prt. 103-97[114].*

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[108] https://www.congress.gov/103/statute/STATUTE-107/STATUTE-107-Pg122.pdf
[109] https://uscode.house.gov/statutes/pl/103/141.pdf
[110] https://www.congress.gov/103/statute/STATUTE-107/STATUTE-107-Pg1547.pdf
[111] https://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/conveng.pdf
[112] https://www.unfpa.org/resources/a6962-framework-actions-follow-programme-action-international-conference-population-and
[113] https://www.congress.gov/103/statute/STATUTE-108/STATUTE-108-Pg1796.pdf
[114] http://www.prop1.org/2000/du/reports/941208rr.htm

- *1995 - Launch of World Trade Organization, update to 1947 General Agreement on Trade and Tariffs.*
- *1996/02/08 - Congress and President Clinton passed Telecommunications Act of 1996. PL 104-104, 110 Stat. 56[115]. Authorized media consolidation, centralized control of propaganda, electromagnetic radiation weapons (cell phones, cell phone towers, etc.)*
- *1996/02/10 - Congress and President Clinton passed National Defense Authorization Act for FY96. PL 104-106, 110 Stat. 443[116]. Section 1061(k) repealed 50 USC 1511 as adopted in 1977 and amended in 1982, eliminating requirement that DOD report to Congress on chemical and biological weapons experiments conducted on military personnel.*
- *1996/04/24 - Congress and President Clinton passed Antiterrorism and Effective Death Penalty Act; Illegal Immigration Reform and Immigrant Responsibility Act; Prison Litigation Reform Act. PL 104-132. 110 Stat. 1214[117]. Section 521(a) prohibited DOD chemical and biological weapons testing in urban and suburban areas, codified at 18 USC 2332C. That provision was repealed in 1998. Also related to court stripping: Congress passing laws to remove federal courts' oversight power regarding legislative and executive acts, eliminate checks and balances. See ACLU report, Oct. 2001, Upsetting Checks and Balances: Congressional Hostility Toward the Courts in Times of Crisis[118].*
- *1996/09/23 - Congress and President Clinton passed NDAA for FY97 - PL 104-201, 110 Stat. 242[119]. Section 1401 et seq, Defense Against Weapons of Mass Destruction Act of 1996, Section 1416, "Military Assistance to Civilian Law Enforcement in Emergency Situations Involving Biological or Chemical Weapons," codified at 10 USC 382, later renumbered to 10 USC 282, authorized domestic deployment of military against civilians.*
- *1996/12/17 - UN Comprehensive Convention on International Terrorism opened for negotiation by resolution 51/210 forming ad hoc committee[120]; subsequently deadlocked over definition of terrorism.*

[115] https://www.congress.gov/104/plaws/publ104/PLAW-104publ104.pdf
[116] https://www.congress.gov/104/plaws/publ106/PLAW-104publ106.pdf
[117] https://www.govinfo.gov/content/pkg/PLAW-104publ132/pdf/PLAW-104publ132.pdf
[118] https://www.aclu.org/sites/default/files/FilesPDFs/ACF47C9.pdf
[119] https://www.govinfo.gov/content/pkg/PLAW-104publ201/pdf/PLAW-104publ201.pdf
[120] https://legal.un.org/committees/terrorism/

- *1997/04/29 - UN Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction[121] entered into force, after drafting in 1992 and signing in 1993.*
- *1997/11/18 - Congress and President Clinton passed National Defense Authorization Act for FY98 - PL 105-85, 111 Stat. 1915[122]. Section 1078, "Restrictions on the use of human subjects for testing of chemical or biological agents," repealed and replaced a 1977 section of 50 USC Chapter 32, the Chemical and Biological Warfare Program. The 1977 provision (50 USC 1520) had added a requirement that DOD report to Congress about DOD human experimentation programs. In 1997, Congress replaced 1520 with 1520a, purportedly to prohibit DOD conducting experiments on soldiers without the individual soldiers informed consent. It was passed by Congress in response to public outrage over injuries and deaths caused by mandated anthrax injections of soldiers during and after the 1991 Gulf War. However, the authority for federal government experimentation on non-consenting human beings continued; Congress simply transferred the program to the Food Drug and Cosmetics Act, 21 USC 360bbb (see below, passed three days after the NDAA) under declared emergency situations (Emergency Use Authorizations/EUA).*
- *1997/11/21 - Congress and President Clinton passed Food and Drug Administration Modernization Act - PL 105-115, 111 Stat. 2296[123]. Added new section to Federal Food Drug and Cosmetics Act to expand access to investigational drugs and devices during emergency situations. Codified at 21 USC 360bbb - "Expanded Access to Unapproved Therapies and Diagnostics". This was the beginning of the Emergency Use Authorization/EUA framework that culminated in the American government's psychological, social and economic coercion program aimed at universal injection of all American citizens with products marketed as Covid-19 vaccines, operational from mid-2020 to the present.*
- *1998/03 - Washington DC tabletop exercise[124] on smallpox epidemic. Used for political cover six months later to establish Strategic National Stockpile of US-government-controlled chemical and biological weapons, disguised as 'vaccines' and other 'pharmaceutical' products.*

[121] https://www.un.org/en/genocideprevention/documents/atrocity-crimes/Doc.42_Conv%20Chemical%20weapons.pdf
[122] https://www.congress.gov/105/plaws/publ85/PLAW-105publ85.pdf
[123] https://www.congress.gov/105/plaws/publ115/PLAW-105publ115.pdf
[124] https://theguardian.newspapers.com/clip/32852979/war-games-show-up-germ-defences-the/

- *1998/10/17 - Congress and President Clinton passed National Defense Authorization Act for FY1999. PL 105-261, 112 Stat. 1920. Section 1401.*
- *1998/10/21 - Congress and President Clinton passed Omnibus Consolidated and Emergency Supplemental Appropriations for FY1999 - PL 105-277, 112 Stat. 2681-358[125]. Title II established the National Pharmaceutical Stockpile, later renamed the Strategic National Stockpile. Appropriated $51,000,000, "to remain available until expended…for pharmaceutical and vaccine stockpiling activities at the Centers for Disease Control and Prevention." Division I, Chemical Weapons Convention Implementation Act of 1998, established prohibitions on chemical weapons. Codified at 18 USC 229[126] and 22 USC 6701[127].*
- *1999/09/17 - Death of Jesse Gelsinger[128] from early gene therapy trial.*
- *1999/09/30 - President Clinton signed Executive Order 13139: Improving Health Protection of Military Personnel Participating in Particular Military Operations. Authorized administration of experimental, FDA-unapproved vaccines to members of the armed forces without informed consent. 64 Federal Register 54175[129]*
- *1999/10/05 - Congress and President Clinton passed NDAA for FY2000 - PL 106-65, 113 Stat. 512[130]. Section 1023, Military Assistance to Civil Authorities to Respond to Act or Threat of Terrorism, Note to 10 USC 382, renumbered in 2016 to 10 USC 282, authorizing domestic deployment of US military against civilians.*
- *1999/10/05 - HHS Interim Final Rule - Human Drugs and Biologics; Determination That Informed Consent Is NOT Feasible or Is Contrary to the Best Interests of Recipients; Revocation of 1990 Interim Final Rule; Establishment of New Interim Final Rule. 64 Federal Register 54180[131]*
- *1999/11 - Population-control zealot Bill Gates launched GAVI[132] (Global Alliance for Vaccines and Immunizations) with $750 million investment from Bill & Melinda Gates Foundation. Public-private partnership organization develops, tests, manufactures and deploys pharmaceutical products in low and middle-income countries.*

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[125] https://www.congress.gov/105/plaws/publ277/PLAW-105publ277.pdf
[126] https://www.law.cornell.edu/uscode/text/18/229
[127] https://www.law.cornell.edu/uscode/text/22/6701
[128] https://en.wikipedia.org/wiki/Jesse_Gelsinger
[129] https://www.govinfo.gov/content/pkg/FR-1999-10-05/pdf/99-26078.pdf
[130] https://www.congress.gov/106/plaws/publ65/PLAW-106publ65.pdf
[131] https://www.govinfo.gov/content/pkg/FR-1999-10-05/pdf/99-25376.pdf
[132] https://www.gatesfoundation.org/ideas/media-center/press-releases/1999/11/global-alliance-for-vaccines-and-immunization

2000 - 2009 - Presidents William Clinton, George W. Bush, Barack H. Obama

- *2000/09 - FDA approved RU-486, mifepristone pill for use to terminate pregnancies: chemical abortion drug.*
- *2000/09 - Project for the New American Century published Rebuilding America's Defenses[133] report. "Advanced forms of biological warfare that can 'target' specific genotypes may transform biological warfare from the realm of terror to a politically useful tool."*
- *2000/11/13 - Congress and President Clinton passed Public Health Improvement Act - PL 106-505, 114 Stat. 2314[134]. Title I, Public Health Threats and Emergencies Act, reworked and expanded Section 319 of Public Health Service Act, 42 USC 247d (the Public Health Emergencies section first added in 1983). Appropriated funding and established a working group on bioterrorism 'countermeasures' research and development.*
- *2001/09/11 - Terrorist airplane attacks on World Trade Center and Pentagon.*
- *2001/09/14 - George W. Bush signed Proclamation 7463, Declaration of National Emergency by Reason of Certain Terrorist Attacks, under 1975 National Emergencies Act. Renewed every year since, most recently by Biden in Sept. 2021. 66 Federal Register 48199[135]*
- *2001/09/18 - 2001/10/09 - Anthrax attacks on US Congress and media organizations.*
- *2001/09/18 - Congress and President Bush passed Authorization for Use of Military Force. PL 107–40; 115 Stat. 224[136]. Passed under the 1973 War Powers Act, 50 U.S. Code § 1541, and construed as putting the United States in a permanent state of war (Global War on Terror) with no limitations in time or geographically.*
- *2001/09/23 - President Bush signed Executive Order 13224[137], blocking property ownership and prohibiting transactions with persons who commit, threaten to commit or support terrorism. List maintained by Office of Foreign Assets Control, US Dept. of Treasury.*

[133] https://archive.org/details/RebuildingAmericasDefenses/mode/2up
[134] https://uscode.house.gov/statutes/pl/106/505.pdf
[135] https://www.govinfo.gov/content/pkg/FR-2001-09-18/pdf/01-23358.pdf
[136] https://www.congress.gov/107/plaws/publ40/PLAW-107publ40.pdf
[137] https://home.treasury.gov/system/files/126/terror.pdf

- *2001/10/23 - Model State Emergency Health Powers Act[138] promulgated by CDC and the Center for Law and the Public's Health at Georgetown and Johns Hopkins Universities, "structured to reflect 5 basic public health functions to be facilitated by law: (1) preparedness, comprehensive planning for a public health emergency; (2) surveillance, measures to detect and track public health emergencies; (3) management of property, ensuring adequate availability of vaccines, pharmaceuticals, and hospitals, as well as providing power to abate hazards to the public's health; (4) protection of persons, powers to compel vaccination, testing, treatment, isolation, and quarantine when clearly necessary; and (5) communication, providing clear and authoritative information to the public."*
- *2001/10/26 - Congress and President Bush passed Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism (USA PATRIOT) Act - PL 107-56, 115 Stat. 272[139]. Amended 18 USC 2331 - Definitions section of 18 USC 113B - Terrorism - to add "domestic terrorism," defined as activities that "(A) involve acts dangerous to human life that are a violation of the criminal laws of the United States or of any State; (B) appear to be intended—(i)to intimidate or coerce a civilian population; (ii) to influence the policy of a government by intimidation or coercion; or (iii) to affect the conduct of a government by mass destruction, assassination, or kidnapping; and (C) occur primarily within the territorial jurisdiction of the United States." There is plenty of evidence to prosecute and convict Fauci, Baric, Gates, Daszak and others under this criminal statute[140]. However, this is also why the conspirators used the FBI to infiltrate the January 6, 2021 Washington DC election protests, to ensure breach of the Capitol and subsequent arrests and indefinite detentions of non-violent trespassers, to create predicates to steer and shape national panic about domestic terrorism exclusively defined as civilians challenging the legitimacy of government officials and acts[141], to steer public anger and distrust away from government agents killing, maiming and imprisoning civilians.*
- *2002/06/12 - Congress and President Bush passed Public Health Security and Bioterrorism Preparedness and Response Act - PL 107-188, 116 Stat. 594[142]. Major*

[138] https://biotech.law.lsu.edu/blaw/bt/MSEHPA.pdf
[139] https://www.govinfo.gov/content/pkg/PLAW-107publ56/pdf/PLAW-107publ56.pdf
[140] https://covid19alternativeperspectives.files.wordpress.com/2021/11/the-criminal-conspiracy-of-coronavirus.pdf
[141] https://crsreports.congress.gov/product/pdf/R/R46829
[142] https://www.congress.gov/107/plaws/publ188/PLAW-107publ188.pdf

amendments to Public Health Service Act (42 USC 201) and Federal Food Drug and Cosmetics Act (21 USC 9). This law fully constructed and expanded funding for the federal government's domestic bioterrorism apparatus headquartered at the CDC, disguising it as a program to protect Americans from non-state actors. Sections included National Preparedness and Response Planning, Coordinating, and Reporting; Strategic National Stockpile; Development of Priority Countermeasures (i.e. fast-tracking approval of drugs and devices without standard safety testing, efficacy testing, and regulatory compliance); Improving State, Local, and Hospital Preparedness for and Response to Bioterrorism and Other Public Health Emergencies; Emergency Authorities (i.e. federal quarantine power); Controls on Dangerous Biological Agents and Toxins (Title II, Subtitle B: Agricultural Bioterrorism Protection Act of 2002[143]); Safety and Security of Food and Drug Supply; Drinking Water Security and Safety. Coincidentally also in 2002, HHS-NIH-funded (grant no. AI23946-08) University of North Carolina researcher and Fauci colleague Ralph Baric filed a US patent (7,279,372)[144] on methods to make bat coronaviruses more lethal to humans, noting that "the US government has certain rights to this invention." More on that[145].

- *2002/11/25 - Congress and President Bush passed Homeland Security Act - PL 107-296, 116 Stat. 2135[146]. Established Department of Homeland Security as a cabinet-level administrative arm of the executive branch. Expanded militarization of domestic surveillance and law enforcement. Title V: established a Directorate of Emergency Preparedness and Response within Department of Homeland Security, headed by an Undersecretary. Strengthened crosslinks between DHS and other federal agencies: Health and Human Services, Federal Emergency Management Agency (FEMA), Department of Defense, Department of Justice and Department of Agriculture, to build and operate a public-health-predicated martial law system.*
- *2003/04/04 - Congressional hearing held on Project Bioshield: Contracting for the Health and Security of the American Public[147]. Congress members discussed authorizing*

[143] https://www.govinfo.gov/content/pkg/COMPS-10255/pdf/COMPS-10255.pdf
[144] https://patents.justia.com/patent/7279327
[145] https://www.ieyenews.com/the-fauci-covid-19-dossier-investigation-into-possible-illegal-patent-claims-resulting-in-millions-of-in-commercial-benefits/
[146] https://www.congress.gov/107/plaws/publ296/PLAW-107publ296.pdf
[147] https://www.govinfo.gov/content/pkg/CHRG-108hhrg87141/pdf/CHRG-108hhrg87141.pdf

HHS to waive informed consent during declared emergencies. (06/14/2022 Bailiwick post[148] with partial transcript.)

- *2003/04/04 - President Bush signed Executive Order 13295 added symptomatic SARS to list of quarantinable communicable diseases, authorizing HHS to order apprehension and indefinite detention of Americans for contracting common respiratory illnesses under 42 USC 264(b)[149] and 42 CFR 70.6[150]. 68 Federal Register 17255[151].*
- *2003/09/16 - Model State Public Health Act[152] published by Johns Hopkins, Georgetown and CDC, working through Turning Point Initiative/Turning Point National Collaborative. Slightly less aggressive form of Model State Emergency Health Powers Act circulated in October 2001.*
- *2003/11/24 - Congress and President Bush passed National Defense Authorization Act for FY2004. PL 108-136, 117 Stat. 1392[153]. Section 1603(a), created 21 USC 360bbb-3 - "Section 564 - Authorization for Medical Products for Use in Emergencies" under the EUA part of the Federal Food Drug and Cosmetics Act as amended in 1997 to add 21 USC 360bbb "Expanded Access to Unapproved Diagnostics and Therapies." At Section 1603(b)(1), Congress added Section 1107a to the military code after 10 USC 1107, authorizing the US President to waive informed consent rights of military personnel during declared emergencies and redefining the meaning of the right to be "informed of an option to accept or refuse administration of a product."*
- *2003/12/22 - US federal court in Doe v. Rumsfeld, 297 F Supp. 2d 119[154] (DDC 2003) addressed informed consent (10 USC 1107) and Presidential waivers (10 USC 1107a) in the anthrax vaccination campaign context. Federal court enjoined DOD from overriding service members informed consent requirements with the experimental Anthrax vaccine. Eight days later, FDA fully approved the Anthrax vaccine. That FDA decision was vacated by the Court 10/27/2004 in Rumsfeld II, 341 F. Supp. 2d 1 (D.D.C. 2004)[155]. The*

[148] https://bailiwicknews.substack.com/p/april-4-2003-rep-henry-waxman-questioning
[149] https://www.law.cornell.edu/uscode/text/42/264
[150] https://www.law.cornell.edu/cfr/text/42/70.6
[151] https://www.govinfo.gov/content/pkg/FR-2003-04-09/pdf/03-8832.pdf
[152] http://216.92.113.133/Pages/pdfs/statute_mod/phsm_TP_model_state_ph_act.pdf
[153] https://uscode.house.gov/statutes/pl/108/136.pdf
[154] https://casetext.com/case/doe-v-rumsfeld-6
[155] *Doe v. Rumsfeld*, 341 F. Supp. 2d 1 (D.D.C. 2004) https://casetext.com/case/doe-v-rumsfeld

injunction was expanded to cover the vaccine after being granted EUA status in Rumsfeld III. 2005 WL 774857 (D.D.C. April 6, 2005[156])

- *2004/07/21 - Congress and President Bush passed Project Bioshield Act. PL 108-276, 118 Stat. 835[157]. Amendments to Public Health Service Act and Federal Food Drug and Cosmetics Act. Nullified informed consent principles under US law. Amended and expanded 21 USC 360bbb on authorization for investigational drugs and devices to be used in emergencies (Emergency Use Authorization). Established program for 'qualified countermeasure' research, procurement, contracting, manufacture, use and liability exemptions. Expanded authority of NIAID Director (Fauci). Appropriated $640,000,000 for the Strategic National Stockpile for FY2002, $590,000,000 for smallpox vaccine development for FY2002, and $5,593,000,000 for "procurement of security countermeasures." Expanded HHS power to subject citizens to involuntary relocation and indefinite detention on communicable disease predicates. Expanded coordination among Secretary of Health and Human Services, Secretary of Defense and Secretary of Homeland Security.*
- *2005/04/01 - President Bush signed Executive Order 13375, adding symptomatic influenza to list of quarantinable communicable diseases, authorizing HHS Secretary to use force to apprehend and detain people under 42 USC 264(b)[158] and 42 CFR 70.6[159].. 64 Federal Register 17299[160].*
- *2005/04/02 - Death of Roman Catholic Pope John Paul II. After conclave, Pope Benedict XVI took the papacy 04/19/2005.*
- *2005/07/05 - HHS FDA Draft Guidance Re: Emergency Use Authorization of Medical Products. 70 FR 38689[161].*
- *2005/09/15 - World Health Assembly adopted World Health Organization International Health Regulations 2005[162] revisions. Entered into force 06/15/2007.*

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[156] *Doe v. Rumsfeld*, Civil Action No. 03-707 (EGS) (D.D.C. Apr. 6, 2005) https://casetext.com/case/doe-v-rumsfeld
[157] https://www.congress.gov/108/plaws/publ276/PLAW-108publ276.pdf
[158] https://www.law.cornell.edu/uscode/text/42/264
[159] https://www.law.cornell.edu/cfr/text/42/70.6
[160] https://www.govinfo.gov/content/pkg/FR-2005-04-05/pdf/05-6907.pdf
[161] https://www.govinfo.gov/content/pkg/FR-2005-07-05/pdf/05-13121.pdf
[162] https://www.who.int/publications/i/item/9789241580496

- *2005/12/30 - Congress and President Bush passed Department of Defense, Emergency Supplemental Appropriations to Address Hurricanes in the Gulf of Mexico, and Pandemic Influenza Act - PL 109-148, 119 Stat. 2818[163], Division C at last pages*
- ***Public Readiness and Emergency Preparedness (PREP) Act.*** *Amended Public Health Service Act. Established power of Secretary of Health and Human Services, during self-declared public health emergency under Section 319, to unilaterally issue declarations recommending "manufacture, testing, development, distribution, administration, or use of one or more covered countermeasures." Codified at 42 USC 247d-6d(b). Added more detail on liability shields for pandemic and epidemic products and security countermeasures. Set pre-suit hurdle requiring HHS to first bring claims against defendants, and bar private claims until after HHS claims resolved, if and only if defendant found liable. Set liability standard at willful misconduct, "establishing a standard…more stringent than negligence in any form or recklessness," requiring proof defendant 1) intentionally engaged in misconduct 2) proximate to victim's injury or death. Established just-following-orders defense for vaccinators and others in the chain of distribution. Established court-alternative, tax-and-debt-funded Covered Countermeasure Process Fund, similar to Vaccine Injury Compensation Fund established in 1986 for products on childhood vaccine schedule. Another provision of the DOD Supplemental Emergency Appropriation funded the Public Health and Social Service Emergency Fund (PHSSEF), a slush fund under the control of the Secretary of Health and Human Services, with $3.3 billion to start.*
- *2006/06/07 - HHS-FDA Interim Final Rule, Medical Devices; Exception From General Requirements for Informed Consent. 71 Federal Register 32827[164]*
- *2006/09 - Department of Justice published report: Role of Law Enforcement in Public Health Emergencies: Special Considerations for an All-Hazards Approach[165].*
  "Depending on the threat, law enforcement's role may include enforcing public health orders (e.g., quarantines or travel restrictions), securing the perimeter of contaminated areas, securing health care facilities, controlling crowds, investigating scenes of suspected biological terrorism, and

[163] https://uscode.house.gov/statutes/pl/109/148.pdf
[164] https://www.govinfo.gov/content/pkg/FR-2006-06-07/pdf/E6-8790.pdf#page=7
[165] https://www.ojp.gov/pdffiles1/bja/214333.pdf

protecting national stockpiles of vaccines or other medicines."

- *2006/10/17 - Congress and President Bush passed NDAA/John Warner Defense Authorization Act for FY2007 - PL 109-364, 120 Stat. 2095[166]. Section 1076 amended 1807 Insurrection Act, (10 USC 333, renumbered as 10 USC 253), providing exemptions to 1878 Posse Comitatus Act, to expand the authority of federal government to deploy US military on American soil against American citizens during "natural disaster, epidemic, or other serious public health emergency, terrorist attack or incident, or other condition in any State or possession of the United States." Repealed in NDAA for FY2008. Passed again in NDAA for FY2012.*
- *2006/11/28 - HHS FDA Guidance: Gene Therapy Clinical Trials - Observing Subjects for Delayed Adverse Effects[167]*
- *2006/12/19 - Congress and President Bush passed Pandemic and All-Hazards Preparedness Act. PL 109-417, 120 Stat. 2878[168]. Fulfilled many of the requirements of the World Health Organization International Health Regulations of 2005[169], by further consolidating and centralizing power in federal Health and Human Services Secretary's hands. Created new HHS department, led by new Assistant Secretary for Preparedness and Response (counterpart to the DHS Director of Emergency Preparedness and Response position created in 2002). Established rules for coordination among HHS, Secretary of Defense, Secretary of Veterans Affairs, Secretary of Transportation and "any other relevant federal agency." Established national framework subordinating state, county, tribal and local public health and law enforcement systems to federal agencies. Expanded surveillance programs. Clarified definitions of qualified countermeasure, security countermeasure, and infectious disease for purposes of 2004 Project Bioshield Act. Established Biomedical Advanced Research and Development Authority (BARDA) division under HHS, "to facilitate a broad-based approach to emergency medical countermeasure-related activities," including $1,070,000,000 appropriation. Tools included HHS access to Other Transactions Authority contracting*

[166] https://www.congress.gov/109/plaws/publ364/PLAW-109publ364.pdf
[167] https://www.genemedi.net/pdf/guidance_for_gene_therapy_clinical%20trials-FDA.pdf
[168] https://www.congress.gov/109/plaws/publ417/PLAW-109publ417.pdf
[169] https://www.who.int/publications/i/item/9789241580496

provisions, and authority to limit competition among manufacturers of pandemic products as defined under 2004 Project Bioshield Act.

- *2007/01/15 - Congress and President Bush passed National Institute of Health Reform Act - PL 109-482, 120 Stat. 3675[170]. Reorganization, consolidation of power and funding.*
- *2007/05/04 - President Bush issued National Security Presidential Directive 51[171]. US Government Continuity of Operations policy.*
- *2007/06/15 - World Health Organization International Health Regulations, 2005 Amendments[172], entered into force.*
- *2007/07/01 - HHS FDA Guidance - Emergency Use Authorization of Medical Products[173]. 71 FR 41083[174]. Finalized draft guidance published in Federal Register 07/05/2005.*
- *2007/07/07 - Roman Catholic Pope Benedict XVI issued Summorum Pontificum, affirming the right of Catholic priests and faithful to celebrate the pre-1962, Traditional Latin Mass.*
- *2007/09/27 - Congress and President Bush passed Food and Drug Administration Amendments Act of 2007. PL 110-85, 121 Stat. 823[175]. Expanded FDA power over new product authorizations and post-marketing surveillance.*
- *2007/12/28 - HHS Interim Final Rule - FDA Exceptions or Alternatives to Labeling Requirements for Products Held by the Strategic National Stockpile. Effective same day. 72 FR 73589[176].*
- *2008/01/28 - Congress and President Bush passed National Defense Authorization Act for FY2008. PL 110-181, 122 Stat. 325[177]. Section 1068 repealed 2007 amendments to Insurrection Act which had expanded exemptions to 1878 Posse Comitatus Act limits on US Presidents' power to deploy the military domestically. Amendments passed again in NDAA for FY2012, again giving President power to deploy military domestically.*

[170] https://www.govinfo.gov/content/pkg/STATUTE-120/pdf/STATUTE-120-Pg3675.pdf#page=11
[171] https://irp.fas.org/offdocs/nspd/nspd-51.htm
[172] https://www.who.int/publications/i/item/9789241580496
[173] https://www.fdanews.com/ext/resources/files/archives/e/Emergency-Use-Authorization.pdf
[174] https://www.govinfo.gov/content/pkg/FR-2007-07-26/pdf/07-3661.pdf
[175] https://www.govinfo.gov/content/pkg/PLAW-110publ85/pdf/PLAW-110publ85.pdf
[176] https://www.govinfo.gov/content/pkg/FR-2007-12-28/pdf/E7-25165.pdf
[177] https://www.congress.gov/110/plaws/publ181/PLAW-110publ181.pdf

- *2008/07 - DOJ-CDC published A Framework for Improving Cross-Sector Coordination for Emergency Preparedness and Response[178]. Merging public health and law enforcement.*
- *2009 H1N1 outbreak, first mass vaccination campaign since 1976 swine flu outbreak.*
- *2009/11/18 - HHS FDA Workshop Summary: Medical Countermeasures Dispensing: Emergency Use Authorization and the Postal Model[179]. "At the workshop, participants noted that EUA has a broader use beyond enabling the use of an unapproved product or extending the use of an approved product to populations for which it was not approved. In particular, it can also be used to address labeling requirements and other challenges that arise because of constraints inherent in a public health response. '**From a legal perspective, there are a lot of situations where EUA helps get past all those requirements**,' said [Susan E. Sherman, J.D., M.S., is a senior attorney with the Office of the General Counsel, HHS] 'You can change the labeling. You can change the information. You can change the dosage. You can give it to populations for which wasn't approved.' "*
- *2009/12/29 - Executive Order 13526[180], Classified National Security Information. Black box federal funding for clandestine projects.*

2010-2019 - Presidents Barack H. Obama, Donald J. Trump

- *2010/03/23 - Congress and President Obama passed Patient Protection and Affordable Care Act (ObamaCare). PL 111-148, 124 Stat. 119[181]. Title VII, Biologics Price Competition and Innovation Act of 2009, related to the legal, approval/authorization, labelling and marketing differences among 'biosimilars,' BLA (Biologics License Application) products, and EUA products.*
- *2010/07/02 - President Obama signed Executive Order 13546, Optimizing the Security of Biological Select Agents and Toxins in the United States. 75 Federal Register 39439[182].*
- *2011/01 - HHS FDA Guidance for Industry: Potency Tests for Cellular and Gene Therapy Products[183]*

[178] https://www.cdc.gov/phlp/docs/CDC_BJA_Framework.pdf
[179] https://www.cdc.gov/phlp/docs/CDC_BJA_Framework.pdf
[180] https://www.ncbi.nlm.nih.gov/books/NBK53126/pdf/Bookshelf_NBK53126.pdf
[181] https://www.govinfo.gov/content/pkg/FR-2010-01-05/pdf/E9-31418.pdf
[182] https://www.govinfo.gov/content/pkg/FR-2010-07-08/pdf/2010-16864.pdf
[183] https://www.fda.gov/media/79856/download

- *2011/06/24 - HHS-FDA Final Rule: Medical Devices; Exception From General Requirements for Informed Consent. 76 Federal Register 36989*[184].
- *2011/09/16 - Congress and President Obama passed Leahy Smith America Invents Act. PL 112-29, 125 Stat. 340*[185]*. Section 33 limited the authority of the US patent office under 35 USC 101, by prohibiting issuing of patents "directed to or encompassing a human organism." Related to 1980 Chakrabarty and 2013 Myriad Supreme Court precedents authorizing patents on genetically-modified living organisms and modified genetic material, and government-ordered mRNA and DNA spike protein Covid injections that reverse-transcribed genetic material into human genome of recipients.*
- *2011/12/31 - Congress and President Obama passed National Defense Authorization Act for FY2012 - PL 112-81, 125 Stat. 1298*[186]*. Section 1021 codified authority for US President to order military arrest and indefinite detention of American civilians without charge or trial under 10 USC 801 et seq. (Uniform Code of Military Justice), to the extent the 2001 Authorization for Use of Military Force*[187]*, passed under the 1973 War Powers Act, (50 U.S. Code § 1541) is construed as putting the United States in a permanent state of war (Global War on Terror) and the national emergency first declared by President Bush in 2001 is extended. It has been extended, every year since.*
- *2012/03/12 - President Obama signed Executive Order 13603, National Defense Resources Preparedness, delegating authorities and addressing national defense resource policies and programs under the Defense Production Act of 1950. 77 Federal Register 16651*[188].
- *2012/07/09 - Congress and President Obama passed Food and Drug Administration Safety and Innovation Act. PL 112-144, 126 Stat. 993*[189]*. Amendments to Federal Food, Drug, and Cosmetic Act regarding user-fee programs for prescription drugs and medical devices, generic drugs and biosimilars, and for other purposes.*
- *2013/01/02 - Congress and President Obama passed National Defense Authorization Act for FY2013. PL 112-239, 126 Stat. 1957*[190]*. Section 1078 "modernized" Smith-Mundt Act*

184 https://www.govinfo.gov/content/pkg/FR-2011-06-24/pdf/2011-15816.pdf
185 https://www.govinfo.gov/content/pkg/PLAW-112publ29/pdf/PLAW-112publ29.pdf
186 https://www.congress.gov/112/plaws/publ81/PLAW-112publ81.pdf
187 https://www.congress.gov/107/plaws/publ40/PLAW-107publ40.pdf
188 https://www.govinfo.gov/content/pkg/FR-2012-03-22/pdf/2012-7019.pdf
189 https://www.congress.gov/112/plaws/publ144/PLAW-112publ144.pdf
190 https://www.congress.gov/112/plaws/publ239/PLAW-112publ239.pdf

of 1948 to authorize domestic deployment of propaganda by the US government, on the American population. Propaganda used with tremendous effect on US population to instill fear and promote behavioral compliance with government orders.

- *2013/01/29 - Congress and President Obama passed Disaster Relief Appropriations Act. PL 113-2, 127 Stat. 4[191]. Division B, Sandy Recovery Act: most major FEMA overhaul since 1988 Robert T. Stafford Act.*
- *2013/02/28 - Roman Catholic Pope Benedict XVI resigned. After conclave, the papacy of Pope Francis began 03/13/2013*
- *2013/03/13 - Congress and President Obama passed Pandemic and All-Hazards Preparedness Reauthorization Act. PL 113-5, 127 Stat. 161[192]. Renewed and updated 2006 Pandemic and All-Hazards Preparedness Act, with amendments to Public Health Service Act and Federal Food Drug and Cosmetics Act. Added sections 564A and 564B to the FDCA to further authorize emergency use of approved products in emergencies and products held for emergency use. Amended definitions of covered countermeasures and qualified pandemic and epidemic products in Section 319F-3 of PHSA (2005 PREP Act provisions). Extended definitions to include products or technologies intended to enhance the use or effect of a drug, biological product, or device used against the pandemic or epidemic or against adverse events from these products.*
- *2013/06/13 - US Supreme Court ruled on Association for Molecular Pathology v. Myriad Genetics, 539 US 576[193], in favor of the biotech corporation and the federal government, finding that naturally-occurring DNA is not patentable, but synthetic cDNA is patentable, under 35 USC 101. Implicates mRNA/DNA injections administered on global population starting in December 2020, reverse-transcription into human genome, and whether injected humans are chattel property of Covid-19 injection patent-holders within US government/DOD, Pfizer, Moderna, AstraZeneca and Janssen.*
- *2014/07/31 - President Obama signed Executive Order 13674, adding asymptomatic, suspected SARS to list of quarantinable communicable diseases under 42 USC 264(b)[194] and 42 CFR 70.6[195]. 79 Federal Register 75461[196]*

[191] https://www.congress.gov/113/plaws/publ2/PLAW-113publ2.pdf
[192] https://www.congress.gov/113/plaws/publ5/PLAW-113publ5.pdf
[193] https://supreme.justia.com/cases/federal/us/569/576/
[194] https://www.law.cornell.edu/uscode/text/42/264
[195] https://www.law.cornell.edu/cfr/text/42/70.6
[196] https://www.govinfo.gov/content/pkg/FR-2014-08-06/pdf/2014-18682.pdf

- *2014/08/19 - HHS FDA Guidance: Decisions for Investigational Device Exemption Clinical Investigations[197]. Related to federal government's position on legal status and regulatory control differences between Emergency Use Authorization (EUA) products, Investigational New Drugs (IND) and Investigational Device Exemptions (IDE).*
- *2015/04/16 - Congress and President Obama passed Medicare Access and CHIP Reauthorization (MACRA) Act. PL 114-10, 129 Stat. 87[198]. Largest changes to health care system since 2010 ObamaCare. Section 511 directed HHS to clarify how changes to human subjects protections under 1991 Common Rule would apply to Medicare and Medicaid "clinical data registries." Related to 'real world evidence' with no legal protections for human subjects, replacing traditional clinical trial procedures that did have legal protections for human subjects. Codified at….*
- *2015/06 - HHS FDA Guidance: Considerations for the Design of Early-Phase Clinical Trials of Cellular and Gene Therapy Products[199]*
- *2015/08 - HHS FDA Guidance: Design and Analysis of Shedding Studies for Virus or Bacteria-Based Gene Therapy and Oncolytic Products[200]*
- *2015/11/25 - Congress and President Obama passed National Defense Authorization Act for FY-2016. PL 114-92, 129 Stat. 893[201]. Section 815 added 'prototype' procurement contracting language (Other Transactional Authority - OTA), authorizing Department of Defense to contract with pharmaceutical corporations to produce bioweapons labeled as medical countermeasures or security countermeasures. Used to contract for production of 'Covid-19 vaccine' bioweapons in 2020, through Medical CBRN [Chemical Biological Radiological Nuclear] Defense Consortium program members. Codified at 10 USC 2371b, renumbered 10 USC 4022 effective 01/01/2021. First two posts on this topic: 05/25/2022[202] and 05/26/2022[203].*
- *2016/09/21 - HHS Final Rule - HHS Clinical Trials Registration and Results. 81 Federal Register 64981[204]*

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197 https://www.fda.gov/media/81792/download
198 https://www.congress.gov/114/plaws/publ10/PLAW-114publ10.pdf
199 https://www.fda.gov/media/106369/download
200 https://www.fda.gov/media/89036/download
201 https://www.congress.gov/114/plaws/publ92/PLAW-114publ92.pdf
202 https://bailiwicknews.substack.com/p/pfizers-motion-to-dismiss-the-brook?s=w
203 https://bailiwicknews.substack.com/p/implications-of-10-usc-2371b-the?s=w
204 https://www.govinfo.gov/content/pkg/FR-2016-09-21/pdf/2016-22129.pdf

- *2016/10/17 - Congress and President Obama passed National Defense Authorization Act for FY2017. PL 114-328, 130 Stat. 2000[205]. 10 USC 111 note at 130 Stat. 2400*
- *2016/10/24 - HHS Workshop Summary - The Nation's Medical Countermeasure Stockpile: Opportunities to Improve the Efficiency, Effectiveness, and Sustainability of the CDC Strategic National Stockpile[206].*
- *2016/11/04 - President Obama signed Executive Order 13747[207]: Advancing the Global Health Security Agenda to Achieve a World Safe and Secure from Infectious Disease Threats.*
- *2016/12/13 - Congress and President Obama passed 21st Century Cures Act (Cures Act 1.0) - PL 114-255, 130 Stat. 1033[208]. Updated and expanded Public Health Service Act "to accelerate the discovery, development, and delivery of 21st century cures." Section 3022 authorized 'real world evidence' instead of clinical trials as grounds for FDA authorizing general use of experimental products, transforming Americans into human subjects and our communities into unmonitored, unregulated experimental test sites. Sections 3023 and 3024 granted broad authority for HHS Secretary to waive or alter human subject protections and informed consent requirements, by transferring each individual human subject's risk-benefit assessment authority to the HHS Secretary, who can preemptively decide, for all subjects collectively, without knowledge of individual health conditions or conscientious beliefs, and without the subjects' knowledge or consent, that risk is 'minimal.' Codified at…*
- *2016/12/23 - Congress and President Obama passed National Defense Authorization Act for FY2017. PL 114-328, 130 Stat. 2509[209]. Section 1241, reform and renumbering, establishment of new chapter (10 USC Ch. 16, for Defense Security Cooperation); DOD Defense Security Cooperation Agency (DSCA) and Director of DSCA, with authority to coordinate and synchronize US military with foreign military forces, and conduct domestic military campaigns in violation of the 1878 Posse Comitatus Act. Authorization*

[205] https://www.congress.gov/114/plaws/publ328/PLAW-114publ328.pdf
[206] https://www.ncbi.nlm.nih.gov/books/NBK396382/pdf/Bookshelf_NBK396382.pdf
[207] https://www.govinfo.gov/content/pkg/FR-2016-11-09/pdf/2016-27171.pdf
[208] https://www.congress.gov/114/plaws/publ255/PLAW-114publ255.pdf
[209] https://www.congress.gov/114/plaws/publ328/PLAW-114publ328.pdf

for domestic military deployment against American civilians, originally codified in 1996 at 10 USC 382[210], renumbered to 10 USC 282[211].

- *2017/01/13 - HHS FDA Guidance: Emergency Use Authorization of Medical Products and Related Authorities[212] (Update/revision to 07/01/2007 version). Related to federal government's position on legal status and regulatory control differences between Emergency Use Authorization (EUA) products, Investigational New Drugs (IND) and Investigational Device Exemptions (IDE).*
- *2017/01/19 - HHS Final Rule - Federal Policy for the Protection of Human Subjects[213]. 82 FR 7149. Joint rule by 16 federal agencies, subsequently adopted by other agencies. Revised 1991 Common Rule[214], which had been developed based on 1947 Nuremberg Code[215] and 1978 Belmont Report[216].*
- *2017/01/19 HHS Final Rule - Control of Communicable Diseases Final Rule[217]. 82 FR 6890. Set up regulations governing apprehension and detention of American people on public health quarantine pretexts.*
- *2017/01/23 - Department of Homeland Security published Biological Incident Annex to the Response and Recovery Federal Interagency Operational Plans[218]. At p. 70, stated that 10 USC 382 [added in 1996, renumbered to 10 USC 282[219] in 2016) "permits Department of Defense to provide support to the Department of Justice under certain circumstances in emergency situations involving Weapons of Mass Destruction, including biological weapons and materials."*
- *2017/07/25 - HHS FDA Guidance: IRB Waiver or Alteration of Informed Consent for Clinical Investigations Involving No More Than Minimal Risk to Human Subjects[220]*

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[210] https://docs.uscode.justia.com/2001/title10/USCODE-2001-title10/pdf/USCODE-2001-title10-subtitleA-partI-chap18-sec382.pdf
[211] https://www.law.cornell.edu/uscode/text/10/282
[212] https://www.fda.gov/media/97321/download
[213] https://www.govinfo.gov/content/pkg/FR-2017-01-19/pdf/2017-01058.pdf
[214] https://www.hhs.gov/ohrp/regulations-and-policy/regulations/common-rule/index.html
[215] http://www.cirp.org/library/ethics/nuremberg/
[216] https://www.videocast.nih.gov/pdf/ohrp_belmont_report.pdf
[217] https://www.govinfo.gov/content/pkg/FR-2017-01-19/pdf/2017-00615.pdf
[218] https://www.fema.gov/sites/default/files/2020-07/fema_incident-annex_biological.pdf
[219] https://www.law.cornell.edu/uscode/text/10/282
[220] https://www.fda.gov/files/about%20fda/published/IRB-Waiver-or-Alteration-of-Informed-Consent-for-Clinical-Investigations-Involving-No-More-Than-Minimal-Risk-to-Human-Subjects---Printer-Friendly.pdf

- *2017/08 - HHS FDA Guidance: Use of Real-World Evidence to Support Regulatory Decision-Making for Medical Devices*[221]
- *2017/08/18 - Congress and President Trump passed FDA Reauthorization Act - PL 115-52. 131 Stat. 1005*[222]
- *2017/10 - Johns Hopkins University Center for Health Security exercise and report, SPARS Pandemic, 2025-2028, A Futuristic Scenario for Public Health Risk Communicators*[223]*. Chapter 13 covered how government and corporate PR representatives should handle "anti-vaccine" messages. Chapter 17 covered how they should manage public awareness and anger about vaccine injury.*
- *2017/12/12 - Congress and President Trump passed National Defense Authorization Act FY 2018 - PL 115-91, 131 Stat. 1283*[224]*. Section 716 added subsection (d) to 10 USC 1107a, re: EUA product use in military. But see FDCA amendment, PL 115-92 (below) passed same day, which immediately repealed 10 USC 1107a(d) while adding new FDCA section on military use of EUAs*
- *2017/12/12 - Congress and President Trump passed Act to amend FDCA EUA statute, 21 USC 360bbb-3. PL 115-92, 131 Stat. 2023*[225]*. Provided for "Additional Emergency Uses for Medical Products to Reduce Deaths and Severity of Injuries Caused by Agents of War." Codified at…*
- *2018/01 - FEMA published Pandemic Crisis Action Plan/PanCAP*[226]*.*
- *2018/06/19 - HHS Final Rule - Federal Policy for the Protection of Human Subjects: Six Month Delay of the General Compliance Date of Revisions While Allowing the Use of Three Burden-Reducing Provisions During the Delay Period. 83 Federal Register 28497*[227]
- *2018/06/19 - Biodefense in the Age of Synthetic Biology*[228] *published by US National Academies of Sciences, Engineering, Medicine.*

[221] https://www.fda.gov/media/99447/download
[222] https://www.congress.gov/115/plaws/publ52/PLAW-115publ52.pdf
[223] https://jhsphcenterforhealthsecurity.s3.amazonaws.com/spars-pandemic-scenario.pdf
[224] https://uscode.house.gov/statutes/pl/115/91.pdf
[225] https://uscode.house.gov/statutes/pl/115/92.pdf
[226] https://bailiwicknewsarchives.files.wordpress.com/2022/11/2018.01-fema-pandemic-crisis-action-plan-pancap.pdf
[227] https://www.govinfo.gov/content/pkg/FR-2018-06-19/pdf/2018-13187.pdf
[228] https://haseloff.plantsci.cam.ac.uk/resources/SynBio_reports/NAS_Biodefense2018.pdf

- *2018/10/044 - Federal Accounting Standards Advisory Board Statement 56[229]. Federal funding for clandestine programs.*
- *2018/10/05 - Congress and President Trump passed Federal Aviation Administration Reauthorization Act. PL 115-254, 132 Stat. 3186[230]. Division D, Disaster Recovery Reform Act, another major FEMA update.*
- ***2018/10/09 - Johns Hopkins University Center for Health Security published report Technologies to Address Global Catastrophic Biological Risks[231], on 'self-spreading vaccine' technology, informed consent challenges of same, and 'self-amplifying mRNA vaccines.'***
- *2019/02/11 - President Trump signed Executive Order 13859[232]: Maintaining American Leadership in Artificial Intelligence. Directed and prioritized federal agency collaboration with industry for AI research and development.*
- *2019/05/22 - Congressional Research Service Opinion: An Overview of State and Federal Authority to Impose Vaccination Requirements[233] by Wen W. Shen*
- *2019/06/11 - President Trump signed Executive Order 13874: Modernizing the Regulatory Framework for Agricultural Biotechnology Products. 84 Federal Register 27899[234].*
- *2019/06/24 - Congress and President Trump passed Pandemic and All-Hazards Preparedness and Advancing Innovation Act - PL 116-22, 133 Stat. 905[235]. Amended Public Health Service Act (42 U.S.C. 201), further consolidating federal power in HHS Secretary's hands during public health emergencies, further merging public health and law enforcement systems, and further subordinating state, tribal, county and municipal governments and American civilians to direct federal control.*
- *2019/09/19 - President Trump signed Executive Order 13887[236]: Modernizing Influenza Vaccines in the United States to Promote National Security and Public Health. Directed and prioritized federal agency collaboration with industry for rapid-deployment*

[229] https://files.fasab.gov/pdffiles/handbook_sffas_56.pdf
[230] https://www.govinfo.gov/content/pkg/PLAW-115publ254/pdf/PLAW-115publ254.pdf
[231] https://jhsphcenterforhealthsecurity.s3.amazonaws.com/181009-gcbr-tech-report.pdf
[232] https://www.govinfo.gov/content/pkg/FR-2019-02-14/pdf/2019-02544.pdf
[233] https://crsreports.congress.gov/product/pdf/LSB/LSB10300/2
[234] https://www.govinfo.gov/content/pkg/FR-2019-06-14/pdf/2019-12802.pdf
[235] https://www.congress.gov/116/plaws/publ22/PLAW-116publ22.pdf
[236] https://www.govinfo.gov/content/pkg/FR-2019-09-24/pdf/2019-20804.pdf

mRNA/DNA/LNP/nanotech bioweapon platforms misclassified as public health protection.

- *2019/10/04 - 10/19 - Roman Catholic Pope Francis hosted pagan Pachamama/Gaia worship ceremony in Vatican Garden, at Basilica of St. Peter, and Santa Maria Traspontina Church, and during Way of the Cross, until angry Catholics seized pagan statues and threw them into Tiber River.*
- *2019/10/18 - Johns Hopkins Center for Health Security conducted Event 201[237]:*

  "...a pandemic tabletop exercise that simulated a series of dramatic, scenario-based facilitated discussions, confronting difficult, true-to-life dilemmas associated with response to a hypothetical, but scientifically plausible, pandemic..."

- *2019/12/12 - Material Transfer Agreement[238] signed between US Health and Human Services (HHS) National Institutes of Health (NIH) National Institute for Allergies and Infection Diseases (NIAID), led by Anthony Fauci, University of North Carolina coronavirus researcher and patent-holder Ralph Baric, and Moderna, for "mRNA coronavirus vaccine candidates developed and jointly owned by NIAID and Moderna."*

2020 - Present - Presidents Donald J. Trump, Joseph R. Biden

- *2020/01/27 - US Secretary of Health and Human Services Determination that a Public Health Emergency Exists[239]. Signed Jan. 31, 2020, effective Jan. 27, 2020. Renewed every 90 days since then. Also signed a 'declaration that circumstances exist justifying the authorization of emergency use of in vitro diagnostics for detection and/or diagnosis of this novel coronavirus.' The determination and declaration were recorded in the Federal Register as taking effect Feb. 4, 2020. 85 Federal Register 7316[240].*
- *2020/01/30 - WHO Director-General Tedros Adhanom Ghebreyesus declared Covid-19 outbreak a "public health emergency of international concern," (PHEIC)[241] triggering the legal obligations of WHO member states under the 2005 International Health Regulations, to suspend national sovereignty and constitutional rights of citizens using*

[237] https://www.centerforhealthsecurity.org/our-work/exercises/event201/about
[238] https://s3.documentcloud.org/documents/6935295/NIH-Moderna-Confidential-Agreements.pdf
[239] https://www.phe.gov/emergency/news/healthactions/phe/Pages/2019-nCoV.aspx
[240] https://www.govinfo.gov/content/pkg/FR-2020-02-07/pdf/2020-02496.pdf
[241] https://www.paho.org/en/news/30-1-2020-who-declares-public-health-emergency-novel-coronavirus

the implementing domestic statutes and regulations they had adopted in compliance with the WHO IHR.

- *2020/02/04 - US Secretary of Health and Human Services Declaration Under the Public Readiness and Emergency Preparedness Act for Medical Countermeasures Against COVID–19[242]. 85 Federal Register 15198 (6 pages). Issued March 10, 2020, retroactive to Feb. 4, 2020. Deployment of the domestic bioterrorism program against all American citizens under Covid-19 pretext.*
- *2020/03/01 - HHS Centers for Medicare and Medicaid Services (CMS) COVID-19 Emergency Declaration Blanket Waivers for Health Care Providers[243]. Exempted health care providers from patient care standards and regulations that would legally apply in non-pandemic circumstances; authorized stripping patients of their rights to have family members and pastors/rabbis visit them and advocate for them in the hospital or nursing home; supported hospital demands that law enforcement officers remove family and pastors from the premises by force; created conditions for death protocols[244] of restraint, withheld water and nutrition, forcible administration of Remdesivir and forcible connection to ventilators under the ICD-10 codes.*
- *2020/03/06 - Congress and President Trump passed Coronavirus Preparedness and Response Supplemental Appropriations Act - PL 116-123, 134 Stat. 146[245]. $8.3 billion to Health and Human Services, Centers for Disease Control and Prevention, National Institute of Health, National Institute of Allergy and Infectious Diseases, Food and Drug Administration, Small Business Administration, Department of State and US Agency for International Development, for research and development of vaccines, therapeutics and diagnostics and other Covid programs.*
- *2020/03/10 - US Secretary of Health and Human Services Declaration Under the Public Readiness and Emergency Preparedness Act for Medical Countermeasures Against COVID–19[246]. 85 Federal Register 15198 (6 pages). Issued March 10, 2020, retroactive to Feb. 4, 2020. Deployment of the domestic bioterrorism program against all American citizens under Covid-19 pretext.*

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[242] https://www.govinfo.gov/content/pkg/FR-2020-03-17/pdf/2020-05484.pdf
[243] https://www.cms.gov/files/document/summary-covid-19-emergency-declaration-waivers.pdf
[244] https://www.thedesertreview.com/opinion/columnists/hospital-death-camps-exposed/article_97776276-674f-11ec-85d0-f33f634331c8.html -> This site gives "404" message
[245] https://www.congress.gov/116/plaws/publ123/PLAW-116publ123.pdf
[246] https://www.govinfo.gov/content/pkg/FR-2020-03-17/pdf/2020-05484.pdf

- *2020/03/11 - WHO Secretary-General press conference: "We have therefore made the assessment that COVID-19 can be characterized as a pandemic.[247]"*
- *2020/03/13 - PanCAP Adapted U.S. Government Covid-19 Response Plan[248].*
- *2020/03/13 - President Trump issued a Stafford Act declaration[249] under the 1988 Stafford Act, and signed Proclamation 9994, Declaring a National Emergency Concerning the Novel Coronavirus Disease (COVID–19) Outbreak, under the 1975 National Emergencies Act. Renewed every year since, most recently by Biden in Feb. 2022. 85 Federal Register 15337[250].*
- *2020/03/18 - President Trump signed Executive Order 13909, Prioritizing and Allocating Health and Medical Resources to Respond to the Spread of COVID–19. 85 Federal Register 16227[251].*
- *2020/03/18 - Congress and President Trump passed Families First Coronavirus Response Act - PL 116-127, 134 Stat. 178[252]. $3.5 billion for Covid mass testing, supplemental nutrition (Department of Agriculture), sick leave, family medical leave, and unemployment compensation (Department of Labor) programs.*
- *2020/03/24 - HHS Secretary Alex Azar issued Declaration of Emergency Use Authorization, declaring "that circumstances exist justifying the authorization of emergency use of medical devices, including alternative products used as medical devices." 85 Federal Register 17335[253].*
- *2020/03/26 - President Trump signed Executive Order 13910, Preventing Hoarding of Health and Medical Resources To Respond to the Spread of COVID–19. 85 Federal Register 17001[254].*
- *2020/03/27 - President Trump signed Executive Order 13911, Delegating Additional Authority Under the Defense Production Act With Respect to Health and Medical Resources To Respond to the Spread of COVID–19. 85 Federal Register 18403[255]*

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247 https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020
248 https://bailiwicknewsarchives.files.wordpress.com/2021/12/2020.03-hhs-trump-lockdown-order.pdf
249 https://trumpwhitehouse.archives.gov/briefings-statements/letter-president-donald-j-trump-emergency-determination-stafford-act/
250 https://www.govinfo.gov/content/pkg/FR-2020-03-18/pdf/2020-05794.pdf
251 https://www.govinfo.gov/content/pkg/FR-2020-03-23/pdf/2020-06161.pdf
252 https://www.congress.gov/116/plaws/publ127/PLAW-116publ127.pdf
253 https://www.govinfo.gov/content/pkg/FR-2020-03-27/pdf/2020-06541.pdf
254 https://www.govinfo.gov/content/pkg/FR-2020-03-26/pdf/2020-06478.pdf
255 https://www.govinfo.gov/content/pkg/FR-2020-04-01/pdf/2020-06969.pdf

- *2020/03/27 - Congress and President Trump passed Coronavirus Aid, Relief, and Economic Security (CARES) Act - PL 116-136, 134 Stat. 281[256]. 15 USC 9001. $2.2 trillion in corporate and small business loans, household stupport and unemployment insurance, tax deferrals, aid to state and local governments, aid to universities and colleges, aid to K-12 schools, aid to hospitals and veterans programs, airline loans and grants, and $10 billion for "Operation Warp Speed."*
- *2020/04/24 - Congress and President Trump passed Paycheck Protection Program and Health Care Enhancement Act - PL 116-139, 134 Stat. 620[257]. $75,000,000,000 for Public Health and Social Services Emergency Fund (first funded in 2005), "to remain available until expended, to prevent, prepare for, and respond to coronavirus, domestically or internationally" plus $25,000,000,000 for research, development and deployment of Covid-19 tests.*
- *2020/05/19 - Advisory Opinion on the PREP Act and the March 10, 2020 Declaration Under the Act, April 17, 2020, as modified on May 19, 2020[258], by Robert P. Charrow of HHS Office of General Counsel. Legal opinion on statutory liability shields.*
- *2020/05/29 - Supreme Court ruled in South Bay United Pentecostal Church v. Newsom, 590 US, (2020)[259], denying role for federal judiciary in Constitutional review of executive and legislative acts taken during declared public health emergencies. Semi-reversed on rehearing, February 2021.*
- *2020/07/20 - DOD-Pfizer Base Agreement[260], through Advanced Technology International; 2020/07/21 - DOD-Pfizer Statement of Work[261], through Advanced Technology International. Pfizer later argued (04/22/2022, Jackson v. Ventavia, Motion to Dismiss[262]) that "Because of pandemic-related exigencies, the agreement was not a standard federal procurement contract, but rather a 'prototype' agreement executed pursuant to 10 U.S.C. § 2371b[.]…The [contract's Statement of Work] describes a 'large scale vaccine manufacturing demonstration' that imposes* ***no requirements relating to***

256 https://www.congress.gov/116/plaws/publ136/PLAW-116publ136.pdf
257 https://www.congress.gov/116/plaws/publ139/PLAW-116publ139.pdf
258 https://www.hhs.gov/sites/default/files/prep-act-advisory-opinion-hhs-ogc.pdf
259 https://www.supremecourt.gov/opinions/19pdf/19a1044_pok0.pdf
260 https://www.documentcloud.org/documents/22028603-pfizer-base-agreement
261 https://www.hhs.gov/sites/default/files/pfizer-inc-covid-19-vaccine-contract.pdf
262 https://www.dropbox.com/s/7iq61dzllyj7hpu/20220422%20Doc.%2037%20-%20Pfizer%20Motion%20to%20Dismiss.pdf?dl=0

Good Clinical Practices ('GCP') or related FDA regulations." *10 USC Section 2371 renumbered 10 USC 4022*[263], *01/01/2021*

- *2020/08/26 - HHS CDC Advisory Committee on Immunization Practices Meeting Summary Report*[264]. *At p. 56 - "Dr. Cohn reminded everyone that under an EUA, vaccines are not allowed to be mandatory. Therefore, early in the vaccination phase individuals will have to be consented and cannot be mandated to be vaccinated." [Attorney Johnsen cited this interpretation of Section 564 in a footnote on p. 7 of her 07/06/2021 slip opinion, immediately citing the judge's 06/12/2021 order in Bridges v. Houston Methodist as "summarily rejecting" the argument.]*
- *2020/12/27 - Consolidated Appropriations Act - PL 116-260, 134 Stat. 1182*[265]. *$2.3 trillion spending bill, including $900 billion for Covid programs.*
- *2021/01/05 - Orange Book Transparency Act - PL 116-290, 134 Stat. 4889*[266]. *Amendments to patent law under Federal Food Drug and Cosmetics Act, (21 USC 9)*
- *2021/01/12 - FDA Chief Scientist Rear Admiral Denise Hinton Authorizations of Emergency Use of Certain Drug and Biological Products During the COVID–19 Pandemic; Availability, effective Dec. 11, 2020 for Pfizer; Dec. 18, 2020 for Moderna. 86 Federal Register 5200*[267].
- *2021/01/21 - HHS Secretary Norris Cochrane notifies state governors that federal government will give 60 days notice*[268] *before terminating the '"determination that a public health emergency exists" first issued by HHS Secretary Alex Azar effective 01/27/2020.*
- *2021/03/11 - Congress and President Biden passed American Rescue Plan/Consolidated Appropriations Act. PL 117-2, 135 Stat. 4*[269]. *Section 7401, Covid-19 Consumer Protection Act. Criminalized advocacy of alternative treatments under Federal Trade Commission provisions.*
- *2021/04/02 - Congressional Research Service Opinion: State and Federal Authority to Mandate COVID-19 Vaccination*[270] *(Version 1) by Wen W. Shen*

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263 https://www.law.cornell.edu/uscode/text/10/4022
264 https://www.cdc.gov/vaccines/acip/meetings/downloads/min-archive/min-2020-08-508.pdf
265 https://www.congress.gov/116/plaws/publ260/PLAW-116publ260.pdf
266 https://www.congress.gov/116/plaws/publ290/PLAW-116publ290.pdf
267 https://www.govinfo.gov/content/pkg/FR-2021-01-19/pdf/2021-01022.pdf
268 https://aspr.hhs.gov/legal/PHE/Pages/Letter-to-Governors-on-the-COVID-19-Response.aspx
269 https://www.congress.gov/117/plaws/publ2/PLAW-117publ2.pdf
270 https://crsreports.congress.gov/product/pdf/R/R46745/3

- *2021/06/12 - Texas federal judge ruled in Bridges v. Houston Methodist Hospital, 543 F. Supp. 3d 525[271] (S.D. Tex. 2021), finding that informed consent doesn't apply to hospital workers, because the injections are government-authorized under FDA Emergency Use Authorization, therefore not part of experimental clinical trials or ordinary medical treatments, therefore hospital employees cannot be legally construed as human subjects or ordinary patients, therefore they have no individual, Constitutional liberties; rights to privacy and against government violation of bodily integrity; or rights to be secure in their persons against warrantless search and seizure.*
- *2021/06/25 - FDA EUA Pfizer Fact Sheet[272] addressing "option to accept or refuse." This is only one of many versions issued between December 2020 and present; it's the one cited by Attorney Johnsen in her legal opinion.*
- *2021/07/06 - Dawn Johnsen, Deputy Attorney General, published DOJ Opinion: Whether Section 564 of the Food, Drug, and Cosmetic Act Prohibits Entities from Requiring the Use of a Vaccine Subject to an Emergency Use Authorization[273]. Related federal government's position on legal status and regulatory control differences between Emergency Use Authorization (EUA) products, Investigational New Drugs (IND) and Investigational Device Exemptions (IDE).*
- *2021/07/16 - Roman Catholic Pope Francis issued Traditionis custodes[274], attempting to abrogate Pope Benedict's 2007 Summorum Pontificum, and revoke the right of Catholic priests and faithful to celebrate the pre-1962, Traditional Latin Mass.*
- *2021/07/29 - President Biden directed[275] Department of Defense to "look into how and when they will add COVID-19 vaccination to the list of required vaccinations for members of the military."*
- *2021/08/24 - Department of Defense order[276] from Secretary of Defense Lloyd Austin, vaxx mandate on military personnel in Army, Navy, Air Force, Marines and Coast Guard.*

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271 https://casetext.com/case/bridges-v-hous-methodist-hosp
272 https://www.drrandywalker.com/wp-content/uploads/2021/08/pfizer-consent-english.pdf
273 https://www.justice.gov/sites/default/files/opinions/attachments/2021/07/26/2021-07-06-mand-vax.pdf
274 https://en.wikipedia.org/wiki/Traditionis_custodes
275 https://www.whitehouse.gov/briefing-room/statements-releases/2021/07/29/fact-sheet-president-biden-to-announce-new-actions-to-get-more-americans-vaccinated-and-slow-the-spread-of-the-delta-variant/
276 https://media.defense.gov/2021/Aug/25/2002838826/-1/-1/0/MEMORANDUM-FOR-MANDATORY-CORONAVIRUS-DISEASE-2019-VACCINATION-OF-DEPARTMENT-OF-DEFENSE-SERVICE-MEMBERS.PDF

- *2021/09 - HHS FDA Guidance: Real-World Data - Assessing Electronic Health Records and Medical Claims Data To Support Regulatory Decision-Making for Drug and Biological Products*[277]
- *2021/09/09 - President Biden signed Executive Order 14042, vaxx mandate on federal contractors. 86 Federal Register 50985*[278].
- *2021/09/09 - President Biden signed Executive Order 14043, vaxx mandate on federal employees. 86 Federal Register 50989*[279].
- *2021/09/09 - President Biden issued directive to Department of Labor Occupational Safety and Health Administration (OSHA), vaxx mandate on private employers with more than 100 employees.*
- *2021/09/17 - President Biden signed Executive Order 14047, adding measles to the list of quarantinable communicable diseases authorizing HHS Secretary to use force to apprehend and detain people under 42 USC 264(b)*[280] *and 42 CFR 70.6.*[281] *86 Federal Register 52591*[282].
- *2021/11 - HHS FDA Guidance: Real-World Data - Assessing Registries to Support Regulatory Decision-Making for Drug and Biological Products*[283]
- *2021/11/05 - President Biden issued directive to Department of Health and Human Services Center for Medicare and Medicaid Services (CMS), vaxx mandate on health care workers at hospitals, nursing homes and other federally-funded facilities.*
- ***2021/11/17 - HHS Interim Final Rule - Possession, Use, and Transfer of Select Agents and Toxins—Addition of SARS–CoV/SARS–CoV–2 Chimeric Viruses Resulting From Any Deliberate Manipulation of SARS–CoV–2 To Incorporate Nucleic Acids Coding for SARS–CoV Virulence Factors to the HHS List of Select Agents and Toxins. 86 Federal Register 64075*[284]*. Chimeric, lab-weaponized SARS-CoV-2 added to list of agents that "have the potential to pose a severe threat to public health and safety" under 42 CFR 73.3. Attempt to block accountability by preemptively reclassifying***

[277] https://www.fda.gov/media/152503/download
[278] https://www.govinfo.gov/content/pkg/FR-2021-09-14/pdf/2021-19924.pdf
[279] https://www.govinfo.gov/content/pkg/FR-2021-09-14/pdf/2021-19927.pdf
[280] https://www.law.cornell.edu/uscode/text/42/264
[281] https://www.law.cornell.edu/cfr/text/42/70.6
[282] https://www.govinfo.gov/content/pkg/FR-2021-09-22/pdf/2021-20629.pdf
[283] https://www.fda.gov/media/154449/download
[284] https://www.govinfo.gov/content/pkg/FR-2021-11-17/pdf/2021-25204.pdf

bioweapons as legally identical to pandemics, to block international law claims brought under the theory that SARS-CoV-2 is a bioweapon, and not a pandemic.

- ***If classified as a bioweapon, the Public Health Emergency of International Concern (international) and public health emergency (federal) legal frameworks would be nullified, instead bringing to bear federal and international laws prohibiting chemical and biological weapons.***
- *2021/12/02 - HHS Final Rule - National Vaccine Injury Compensation Program: Adding the Category of Vaccines Recommended for Pregnant Women to the Vaccine Injury Table - 86 Federal Register 68423*[285]*. Added vaccines recommended for pregnant women to the list of vaccines subject to the 1986 VICP compensation scheme, so as add another hurdle to civil suits against Covid-19 injection manufacturers, even though the products had not yet been added to the childhood vaccine schedule that otherwise governs access to VICP scheme. Because CDC does recommend them for pregnant women.*
- *2021/12/27 - Congress and President Biden passed National Defense Authorization Act FY2022 - PL 117-81, 135 Stat. 1541*[286]*. At Section 716, established military vaxx tracking system, including refusals, under 10 USC 1110 (originally re anthrax vaxx). At Section 6501, authorized US government to engage with Bill Gates Coalition for Epidemic Preparedness Innovations (CEPI). More coverage*[287]*.*
- *2022/01/13 - Supreme Court ruled in Missouri v. Biden (21 A 240), Louisiana v. Biden (21 A. 241), 595 US __, (2022)*[288]*, asserting federal funding for hospitals and nursing homes voids Constitutional protection for employees individual bodily integrity and informed consent to medical treatment.*
- *2022/02/07 - Congressional Research Service Opinion: State and Federal Authority to Mandate COVID-19 Vaccination*[289]
- *2022/02/10 - Supreme Court leaked draft opinion in Dobbs v. Jackson Women's Health, leaked draft opinion*[290] *by Justice Samuel Alito. SCOTUS poised to explicitly deny the principle of Constitutionally-protected inalienable individual rights to personal*

[285] https://www.govinfo.gov/content/pkg/FR-2021-12-02/pdf/2021-26197.pdf
[286] https://www.govinfo.gov/content/pkg/PLAW-117publ81/pdf/PLAW-117publ81.pdf
[287] https://bailiwicknews.substack.com/p/2022-national-defense-authorization
[288] https://supreme.justia.com/cases/federal/us/595/21a240/case.pdf
[289] https://crsreports.congress.gov/product/pdf/R/R46745
[290] https://s3.documentcloud.org/documents/21835435/scotus-initial-draft.pdf

privacy, conscience, bodily integrity, or liberty, against State exercise of authority. Final ruling issued 06/24/2022.

- *2022/03/09 - President Biden signed Executive Order 14067, Ensuring Responsible Development of Digital Assets, on Central Bank Digital Currencies)*
- *2022/03/15 - Congress and President Biden passed Consolidated Appropriations Act - PL 117-103, 136 Stat. 49[291]. $1,274,678,000 for the Public Health and Social Services Emergency Fund (HHS slush fund established in 2005). $780,000,000 for new domestic bioweapons production, classified as 'security countermeasures' under the Public Health Service Act as amended by 2004 Project Bioshield Act, 42 USC 247d-6b(c)(1)(B)[292]; $845,000,000 to stock the Strategic National Stockpile established 1998, controlled by the CDC within HHS 42 USC 247d-6b(a)[293]; $300,000,000 "to prepare for or respond to an influenza pandemic," including federally-funded construction or renovation of privately-owned pharmaceutical manufacturing facilities, if the Secretary of Health and Human Services finds such construction or renovation necessary; $1,000,000,000 to establish ARPA-H: Advanced Research Program Agency - Health, to conduct research and development of bioweapons misbranded as public health measures; $3,880,000,000 to US Agency for International Development (US-AID) for programs mislabeled as 'Global Health Programs,' including immunization programs, HIV/AIDS programs, The GAVI Alliance [population-control zealot Bill Gates' Global Alliance for Vaccines and Immunization] and a multilateral vaccine development partnership, for, among other projects, "experimental contraceptive drugs, devices and medical procedures."*
- *2022/05/17 - Congressional Research Service Opinion: State and Federal Authority to Mandate COVID-19 Vaccination[294]. (Version 9)*
- *2022/05/17 - Congressional Research Service Opinion: Status of Federal COVID-19 Vaccination Mandate Litigation[295]. (Version 7)*
- *2022/06/24 - Dobbs v. Jackson Womens Health SCOTUS decision released.*
- *2022/07/15 - HHS Secretary Xavier Becerra extended 01/27/2020 determination that 'public health emergency' exists[296].*

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[291] https://www.govinfo.gov/content/pkg/PLAW-117publ103/pdf/PLAW-117publ103.pdf
[292] https://www.law.cornell.edu/uscode/text/42/247d-6b
[293] https://www.law.cornell.edu/uscode/text/42/247d-6b
[294] https://crsreports.congress.gov/product/pdf/R/R46745
[295] https://crsreports.congress.gov/product/pdf/LSB/LSB10681/7
[296] https://aspr.hhs.gov/legal/PHE/Pages/covid19-15jul2022.aspx

- *2022/07/22 - HHS Secretary Xavier Becerra elevated Administration for Strategic Preparedness and Response (ASPR) from staff division to operating division, still under HHS Assistant Secretary Dawn O'Connell.*
- *2022/09/12 - President Biden signed Executive Order 14081 - Advancing Biotechnology and Biomanufacturing Innovation for a Sustainable, Safe, and Secure American Bioeconomy. 87 Federal Register 56849*[297]*.*
- *2022/09/28 - HHS-FDA Proposed Rules: Protection of Human Subjects and Institutional Review Boards. 87 Federal Register 58733*[298]
- *2022/10/13 - HHS Secretary Xavier Becerra extended 01/27/2020 determination that 'public health emergency' exists*[299]*.*
- *2022/10/13 - Boston University researchers, funded by Fauci's NIAID, publish preprint paper on their gain-of-function/DURC research combining the toxicity of the original Wuhan strain of SARS-CoV-2 with the increased transmissibility of the Omicron variant to achieve 80% mortality in transgenic, humanized mice expressing the ACE-2 receptor. Role of spike in the pathogenic and antigenic behavior of SARS-CoV-2 BA.1 Omicron*[300]
- *2022/10/18 - President Biden National Security Memorandum (NSM-15) on Countering Biological Threats, Enhancing Pandemic Preparedness, and Achieving Global Health Security*[301] *and National Biodefense Strategy Implementation Plan*[302]*.*
- ***2022/12/23 - NDAA for FY2023*[303]*. PL 117-263. Section 5955: Global Health Security and International Pandemic Prevention, Preparedness and Response Act of 2022. Authorizes, expands and funds globalized military-health structure linking US military to global genocide apparatus operating under WHO frameworks.***
- *2022/12/29 - Consolidated Appropriations Act for FY2023*[304]*. PL 117-328. Many federal and state-level public health/martial law authorization and funding provisions included. H.R. 2617-419: "Public Health and Social Services Emergency Fund. For expenses*

[297] https://www.govinfo.gov/content/pkg/FR-2022-09-15/pdf/2022-20167.pdf
[298] https://www.govinfo.gov/content/pkg/FR-2022-09-28/pdf/2022-21088.pdf
[299] https://aspr.hhs.gov/legal/PHE/Pages/covid19-13Oct2022.aspx
[300] https://www.biorxiv.org/content/10.1101/2022.10.13.512134v1.full.pdf
[301] https://www.whitehouse.gov/briefing-room/presidential-actions/2022/10/18/national-security-memorandum-on-countering-biological-threats-enhancing-pandemic-preparedness-and-achieving-global-health-security/
[302] https://www.whitehouse.gov/wp-content/uploads/2022/10/National-Biodefense-Strategy-and-Implementation-Plan-Final.pdf
[303] https://www.congress.gov/117/bills/hr7776/BILLS-117hr7776enr.pdf%20%20S "Page not found"
[304] https://www.congress.gov/117/bills/hr2617/BILLS-117hr2617enr.pdf

necessary to support activities related to countering potential biological, nuclear, radiological, chemical, and cybersecurity threats to civilian populations, and for other public health emergencies, $1,647,569,000, of which $950,000,000…for expenses necessary to support advanced research and development…of the Biomedical Advanced Research and Development Authority." H. R. 2617-420 - $1,500,000,000 for ARPA-H: Advanced Research Projects Agency for Health. Section 2235 at H.R. 2617-1297, One Health Framework: "coordination mechanism at the Federal level to strengthen One Health collaboration related to prevention, detection, control, and response for zoonotic diseases and related One Health work across the Federal Government."

Pending legislation

List last reviewed Summer 2022. Some of these laws may have been passed in 2023 NDAA, 2023 Consolidated Appropriations Act or other Congressional acts.

- *2022 Research Investment to Spark the Economy (RISE) ACT*[305] *- Pending, S.289. Senate counterpart to Cures 2.0 Act/HR6000, Title V, Section 502. Authorizes billions in funding for the Departments of Agriculture, Commerce, Defense, Education, Energy, the Interior, Health and Human Services, and Transportation, National Aeronautics and Space Administration (NASA), National Science Foundation, and Environmental Protection Agency to provide support for research regarding COVID-19 (i.e., coronavirus disease 2019) or research disrupted by the COVID-19 pandemic. Support may be used to provide supplemental funding to extend the duration of a grant…that was awarded prior to enactment, or to expand the purposes of such a grant; issue awards to research the effects of the current pandemic and potential future pandemics; and provide flexibility on awards to account for facility closures or other limitations during the COVID-19 public health emergency.*
- *2022 PASTEUR Act*[306] *- Pending, HR 3932. (41 pages). Pioneering Anti-microbial Subscriptions To End Upsurging Resistance Act. Would create subscription-based procurement contracts between the US government and pharmaceutical corporations for ongoing, open-ended development, purchase and deployment of drugs alleged to treat*

[305] https://www.congress.gov/bill/117th-congress/senate-bill/289/text
[306] https://www.congress.gov/117/bills/hr3932/BILLS-117hr3932ih.pdf

antibiotic-resistant infections. Appropriates $11 billion for program. Program to be developed by committee comprised of National Institute of Allergy and Infectious Diseases, Centers for Disease Control and Prevention, Biomedical Advanced Research and Development Authority, Food and Drug Administration, Centers for Medicare & Medicaid Services, Veterans Health Administration, and Department of Defense.

- *2022 Cures 2.0 Act*[307] *- Pending, HR6000. (173 pages.) Would legally establish Covid-infection injury and Covid-19 bioweapon injection injury as "long Covid," (erasing injection-caused injury as a separate diagnostic classification) and appropriate research and treatment funding; would establish genomic testing program for children and teens (corroborating evidence that government developed the bioweapons to cause listed harms and anticipates observing those effects in the population); would establish pharmacogenetic consulting and other programs. Title V, Section 502 is House counterpart to S.289, RISE Act (see above), to authorize billions in funding for the Departments of Agriculture, Commerce, Defense, Education, Energy, the Interior, Health and Human Services, and Transportation, National Aeronautics and Space Administration (NASA), National Science Foundation, and Environmental Protection Agency to provide support for research regarding COVID-19 (i.e., coronavirus disease 2019) or research disrupted by the COVID-19 pandemic.*

COVID-19 injectable bioweapons as case study in legalized, government-operated domestic bioterrorism. Or: why there won't be any civil suits, or compensatory damages for injured victims or survivors of dead victims.

Since first realizing the implications of the many Congressional statutes and Health and Human Services regulations adopted to create and operate the bioterrorism program, mostly between 1997 and the present, I've been intermittently finding the specific citations for each statement while researching related issues.

Some statements are simply logical deductions from the first premise, corroborated by the observable actions and inactions of Food and Drug Administration officials as the observable injuries and deaths mount up in the American people.

[307] https://www.congress.gov/117/bills/hr6000/BILLS-117hr6000ih.pdf

Others are specifically written into the laws, but I don't yet have the citations because I've prioritized my research time investigating other issues related to the bioterrorism program.

I'm posting the information as I understand it today [June 9, 2022], despite those limitations, in case it's useful for readers who also follow FDA Vaccine and Related Biological Products Advisory Committee (VRBPAC) reporting by Toby Rogers[308], Igor Chudov[309], Steve Kirsch[310], Jessica Rose[311], and others.

They continue to rightly raise public awareness and alarm about FDA's ongoing failure to protect the public from the Emergency Use Authorized (EUA) products.

But they don't address the main reason** why **FDA is acting as it is.

FDA is not pulling the EUA products from the market or stopping the 'vaccination' campaign because Health and Human Services Secretary Xavier Becerra and FDA Commissioner Robert Califf are running the US government's bioterrorism program jointly with Defense Secretary Lloyd Austin, Department of Justice Attorney General Merrick Garland, Department of Homeland Security Secretary Alejandro Majorkas, Pfizer CEO Albert Bourla, Moderna CEO Stephane Bancel, and World Health Organization Director-General Tedros Adhanom Ghebreyesus.

Main Premise.

*Use of EUA-covered medical countermeasure (MCM) products including masks, PCR tests, mRNA and DNA injections, and other drugs, devices and biologics, once designated as such by the Secretary of Health and Human Services (March 10, 2020, retroactive to February 4, 2020[312]) "**shall not be considered to constitute a clinical investigation."** 21 USC 360bbb-3(k). FDA EUA law, adopted 1997 and amended 2003, 2004, 2005, 2013, 2017.*

[308] https://substack.com/profile/10796056-toby-rogers
[309] https://substack.com/profile/15579919-igor-chudov
[310] https://stevekirsch.substack.com/
[311] https://jessicar.substack.com/
[312] https://www.govinfo.gov/content/pkg/FR-2020-03-17/pdf/2020-05484.pdf

This is true no matter how untested, unmonitored, unsafe, or ineffective they are, no matter whether their harmfulness to human health and uselessness for infection-control are known before use, or discovered afterward.

Legal implications derived from the main premise:

1. ***There is no stopping condition.***
2. *EUA products are exempt from laws regulating researcher use of investigational, experimental drugs, devices and biologics on human beings.*
3. *EUA products are exempt from laws regulating physician use of approved drugs, devices and biologics as medical treatments for patients.*
4. *There are no manufacturers of experimental products (EUA products are not part of any clinical investigation, and therefore not experimental.)*
5. *There are no government or private contracts for purchase of experimental products; there are only contracts for 'large scale vaccine manufacturing demonstrations.*[313] *'*
6. *There is no act of administration of any experimental products.*
7. *There are no nurses or pharmacists administering experimental products.*
8. *There are no human subjects (of experiments) or patients (of physicians providing treatment) receiving experimental products: no victims.*
9. *There is no party responsible for the wellbeing of recipients after administration of EUA products.*
10. *There is no treatment group and no control group.*
11. *Human beings administering EUA products have no* ***informed consent*** *obligations to provide information about ingredients, risks, benefits, alternatives, or the option to accept or refuse the products. See 21 USC 360bbb-3(e)(1)(A)(ii)) waiving informed consent for unapproved products (2004); 21 USC 360bbb-3(e)(2)(A) waiving informed consent for unapproved use of an approved product (2004); 21 USC 355(i)(4) waiving informed consent for experimental products classified by HHS as 'minimal risk' drugs (2016); 21 USC 360j(g)(3)(D)(i) waiving informed consent for experimental 'minimal risk' devices (2016).*

[313] https://bailiwicknews.substack.com/p/implications-of-10-usc-2371b-the?s=w

12. *Human beings receiving EUA products have no **informed consent** rights to receive information about ingredients, risks, benefits, alternatives, or the option to accept or refuse the products. See citations, bullet point above.*
13. *There are no Institutional Review Boards supervising administration of the experimental products.*
14. *There are no safety standards for EUA products.*
15. *There are no efficacy standard for EUA products. See 21 USC 360bbb-3(c)(2)(A), 1997, 2003, 2004, re: 'may be effective.'*
16. *There are no clinical investigators studying the effects of EUA products on human subjects.*
17. *There are no doctors, nurses, or other treatment providers providing experimental treatment to their patients subject to the Hippocratic Oath ("first do no harm") using EUA products.*
18. *There is no coordinated, public, federal government monitoring of recipients after receiving the products for adverse effects and deaths.*
19. *There is no coordinated, public, federal government data collection or analysis.*
20. *There is no legal requirement for medical supervision during product administration.*
21. *There is no legal requirement for recipient monitoring after product administration.*
22. *'Real world evidence' — mass administration of products to general public, followed by collection of private/proprietary information about the effects, from health insurance systems, government databases (Medicare[314], Medicaid, Defense Medical Epidemiology Database, Veterans Health Administration) and other private databases — is authorized for the purposes of FDA regulatory decisions. See 21 USC 355g. 2016.*
23. *There is no requirement for individual prescriptions to be written prior to dispensing EUA products, and products dispensed without prescriptions "shall not be deemed adulterated or misbranded." See 21 USC 360bbb-3a(d). 2013.*
24. *Manufacturers, as contractors, are considered HHS employees for purposes of legal immunity under Federal Tort Claims Act. See 42 USC 247d-6a(d)(2)(A).*
25. *DOD is authorized to contract with pharmaceutical corporations to conduct 'prototype' experiments on the general public, and under such contracts, is exempt from legal*

[314] https://www.naturalnews.com/files/Salus_Humetrix_VE_study_2021_09_28.pdf

obligation to comply with Good Clinical Practices or other FDA regulations. See 10 USC 2371b (2015), renumbered 10 USC 4022 (Jan. 1, 2021, effective Jan. 1, 2022)

26. *One of the factors to be considered by HHS secretary in making determinations about EUA products (qualified security countermeasures) and use of Special Reserve Fund/Strategic National Stockpile appropriations to procure them is "whether there is a lack of a significant commercial market for the product at the time of procurement, other than as a security countermeasure." See 42 USC 247d-6b (c)(5)(B)(iii)*
27. *There are no required standards for quality-control in manufacturing; no inspections of manufacturing procedures; no prohibition on wide variability among lots; no prohibition on adulteration; and no required compliance with Current Good Manufacturing Practices. EUA products, even though unregulated and non-standardized, "shall not be deemed adulterated or misbranded." See 21 USC 360bbb-3a(c). 2013.*
28. *There are no labeling requirements regarding the contents or ingredients in EUA products. 21 USC 360bbb-3(e)(2)(B)(ii). 2004.*
29. *There is no limitation of administration of EUA products past their expiration dates.*
30. *There cannot be clinical trial fraud, because there are no clinical investigations, no investigational drugs, no investigators and no human subjects.*
31. *There are no marketing standards.*
32. *There cannot be consumer fraud, because the only legal parties to the financial transactions are the US government (DOD) as buyer; the US government (HHS) as regulator authorizing exemptions from consumer protection laws that otherwise apply to medical products; and the pharmaceutical corporations as sellers, contracted to develop and manufacture the products. There are no commercial pharmaceutical products, no commercial marketplace, and no commercial market consumers.*
33. *There is no access to courts for judicial review of the facts or law relating to HHS Secretary declarations of EUA products, which are committed to agency discretion. See 42 USC 247d-6d(b)(7). 2005.*
34. *There is no access for plaintiffs, to civil courts for judicial review, and no entity to whom civil liability can attach, for injuries and deaths caused by declared covered countermeasures, unless and until FDA/HHS and/or Attorney General/DOJ file enforcement action against manufacturers and prove willful misconduct proximate to injury or death, but HHS and DOJ have operated the EUA product program together*

with the manufacturers since inception, and will not prosecute their co-conspirators. See 42 USC 247d-6d. 2005.

35. Even if there were access to courts for judicial review, and a fact-finder found evidence of harms caused by administration of products to recipients, and even evidence that those who caused the harms, by developing, manufacturing, distributing and/or administering the EUA products, knew the EUA products were toxic and knew their own actions were harmful, "just following orders" is an authorized, legal defense. See 42 USC 247d-6d(c)(4). 2005.

Part Seven:

"National Strategy to Develop Distributed Ledger Technology for Digital ID Tucked into 2023 Defense Budget"- By The Sharp Edge

December 20, 2022

https://www.coreysdigs.com/technology/national-strategy-to-develop-distributed-ledger-technology-for-digital-id-tucked-into-2023-defense-budget/ [1]

The corrupt DC uniparty has conspired against voters who elected a Republican majority in the House to put a stop to wasteful spending driving inflation, by pushing for a massive omnibus bill as the Christmas holiday deadline looms. In a setup for the vote on the omnibus bill, on December 15, 2022, Congress passed a one-week Continuing Resolution along with the National Defense Authorization Act of 2023 (NDAA), which is the defense budget for next year. The NDAA is headed to Biden's desk for signature.

Members on both sides of the isle have praised their efforts on the passage of the NDAA, which includes repealing the Covid injection mandate for service members. While revoking the Covid jab mandate for military members is a victory garnering much of the focus, other aspects of the $858 billion dollar defense bill have gone completely unnoticed. The devil is always in the details.

Tucked inside this massive defense bill is the creation of a "National research and development strategy for distributed ledger technology" to build the framework for a digital enslavement system nationwide. Though this agenda has been explicitly laid out by the Biden regime over the course of 2022, it has been years in the making as outlined in the Corey's Digs report entitled 'The Global Landscape on Vaccine ID Passports' Part 3[2] and Part 4.[3]

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[1] *https://www.coreysdigs.com/technology/national-strategy-to-develop-distributed-ledger-technology-for-digital-id-tucked-into-2023-defense-budget/*

[2] https://www.coreysdigs.com/technology/the-global-landscape-on-vaccine-id-passports-part-3-the-key-implementers-of-your-digital-identity-onto-the-blockchain/

[3] https://www.coreysdigs.com/technology/the-global-landscape-on-vaccine-id-passports-part-4-blockchained/

Background

On March 9, 2022, the Biden regime issued an Executive Order for "Ensuring Responsible Development of Digital Assets,[4]" in which the White House called for "an evolution and alignment of the United States Government approach to digital assets," while placing the "highest urgency" on the development of a United States Central Bank Digital Currency (CBDC). Central banks around the world, including the Federal Reserve, are currently advancing in research, development and implementation of CBDCs.[5]

This initiative came despite little support from the American public which has remained adamantly opposed to a US CBDC. In June 2022, the Fed published public comments[6] on their proposal for a CBDC. Of the 2,052 comments (excluding blank entries and individuals soliciting government contracts) 71% were "concerned or outright opposed to the idea of a CBDC in the United States," based on a Cato Institute study.[7]

The Biden EO called for the Director of the Office of Science and Technology Policy and the Chief Technology Officer, in consultation with the Treasury Secretary, the Fed Chair as well as heads of other relevant agencies, to report back to the White House within 180 days on the technology infrastructure necessary to implement a CBDC system nationwide.

In response to the White House Executive Order, in September 2022, the Office of Science and Technology Policy (OSTP) issued their report on "Technical Evaluation for a U.S. Central Bank Digital Currency System,[8]" which recommends that the OSTP and the National Science Foundation (NSF) lead a "National Digital Assets Research and Development (R&D) Agenda" to support the Fed's CBDC exploration as well as scale-up "relevant technological infrastructure, capacity, and expertise across the Federal government." While the White House press release[9] noted that, "this agenda will also cover topics less related to CBDCs," it failed to mention

[4] https://www.federalregister.gov/documents/2022/03/14/2022-05471/ensuring-responsible-development-of-digital-assets#p-13

[5] https://www.coreysdigs.com/technology/the-rise-risks-of-central-bank-digital-currencies/

[6] https://www.federalreserve.gov/cbdc-public-comments.htm

[7] https://www.cato.org/blog/update-two-thirds-commenters-concerned-about-cbdc

[8] https://www.whitehouse.gov/wp-content/uploads/2022/09/09-2022-Technical-Evaluation-US-CBDC-System.pdf

[9] https://www.whitehouse.gov/ostp/news-updates/2022/09/16/technical-possibilities-for-a-u-s-central-bank-digital-currency/

their intentions to develop distributed ledger technology for the purposes of a nationwide digital identity program or a vaccine passport system.

The G20 declaration signed two months later, did however reaffirm the Biden regime's commitment to implementing vaccine ID passports, while also exploring a CBDC payment system. The declaration states,[10] "We acknowledge the importance of shared technical standards and verification methods, under the framework of the IHR (2005), to facilitate seamless international travel, interoperability, and recognizing digital solutions and non-digital solutions, including proof of vaccinations. We support continued international dialogue and collaboration on the establishment of trusted global digital health networks as part of the efforts to strengthen prevention and response to future pandemics, that should capitalize and build on the success of the existing standards and digital COVID-19 certificates."

While this was in the works, the Department of Defense awarded[11] the Joint Warfighting Cloud Capability (JWCC) contract to Amazon, Google, Microsoft, and Oracle in a shared $9 billion contract on December 7th. The cloud computing contract extends through June of 2028. Cloud computing, artificial intelligence, and distributed ledger technology are all key components to the development of their digital prison.

The agenda to build the infrastructure for a digital enslavement system, which the Biden regime has methodically laid out over the course of 2022, will now be implemented through Congressional authorization under the National Defense Authorization Act of 2023, which Biden is expected to sign at the end of the week.

National Strategy to Develop Distributed Ledger Technology

Tucked into the 4400-page NDAA[12] in Section 5913 is the creation of a "National research and development strategy for distributed ledger technology." Distributed ledger technology research for this project may include "use cases for distributed ledger technologies across various industry sectors and government, including applications pertaining to digital identity… medical information management… inclusive financial services… [and] digital credentials."

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[10] https://www.whitehouse.gov/briefing-room/statements-releases/2022/11/16/g20-bali-leaders-declaration/

[11] https://www.defense.gov/News/Releases/Release/Article/3239378/department-of-defense-announces-joint-warfighting-cloud-capability-procurement/

[12] https://www.govtrack.us/congress/bills/117/hr7776/text

In other words, this is a national strategy to develop the infrastructure for the entire digital enslavement system which includes digital IDs, vaccine passports, CBDCs and, of course, a social credit system.

(H) use cases for distributed ledger technologies across various industry sectors and government, including applications pertaining to—

(i) digital identity, including trusted identity and identity management;

(ii) digital property rights;

(iii) delivery of public services;

(iv) supply chain transparency;

(v) medical information management;

(vi) inclusive financial services;

(vii) community governance;

(viii) charitable giving;

(ix) public goods funding;

(x) digital credentials;

(xi) regulatory compliance;

(xii) infrastructure resilience, including against natural disasters; and

(xiii) peer-to-peer transactions; and

Source: www.govtrack.us/congress/bills/117/hr7776/text [13]

Promoting Widespread Participation

The creation of a national strategy for research and development of distributed ledger technology outlined in Section 5913 of the NDAA does not solely focus on building the infrastructure. It extends to promoting increased participation from the public by facilitating research on human behavior. For example, the Director of the National Science Foundation (NSF) is tasked with supporting research "which may include… the social behaviors of participants in decentralized networks enabled by distributed ledger technologies." Furthermore, research by the NSF may include, *"the social, behavioral,* and economic implications associated with the growth of applications of distributed ledger technologies, including decentralization in business, financial, and economic systems."

In addition, the Director of the National Institute of Standards and Technology, is authorized to carry out an applied research project which must "identify potential applications of distributed

[13] https://www.govtrack.us/congress/bills/117/hr7776/text

ledger technologies, including those that could benefit activities at the Department of Commerce or at other Federal agencies." This applied research project may include facilitating, "broader participation in distributed ledger technologies of populations historically underrepresented in technology, business, and financial sectors."

(d) Distributed ledger technology applied research project.—

(1) Applied research project.—

Subject to the availability of appropriations, the Director of the National Institute of Standards and Technology, may carry out an applied research project to study and demonstrate the potential benefits and unique capabilities of distributed ledger technologies.

(2) Activities.—

In carrying out the applied research project, the Director of the National Institute of Standards and Technology shall—

(A) identify potential applications of distributed ledger technologies, including those that could benefit activities at the Department of Commerce or at other Federal agencies, considering applications that could—

(i) improve the privacy and interoperability of digital identity and access management solutions;

(ii) increase the integrity and transparency of supply chains through the secure and limited sharing of relevant supplier information;

(iii) facilitate broader participation in distributed ledger technologies of populations historically underrepresented in technology, business, and financial sectors; or

(iv) be of benefit to the public or private sectors, as determined by the Director in consultation with relevant stakeholders;

Source: www.govtrack.us/congress/bills/117/hr7776/text [14]

Of course, the initiative to promote broader acceptance of distributed ledger technology is framed in such a way as to address equity and inclusion. However, historically underrepresented populations aren't the only ones who resist this agenda. More than two thirds of Americans are "concerned or outright opposed"[15] to it, based on public comments to the Fed's CBDC proposal. Any research into human behavior and facilitating universal acceptance of this technology would likely be used against the American public who has defied their attempts to impose a digital enslavement system.

[14] https://www.govtrack.us/congress/bills/117/hr7776/text

[15] https://www.cato.org/blog/update-two-thirds-commenters-concerned-about-cbdc#:~:text=Specifically%2C%20more%20than%2066%20percent,of%20disintermediating%20the%20banking%20system.

National Strategy Funding

While specific funding amounts to build this distributed ledger infrastructure are not disclosed under Section 5913 of the NDAA, the legislation states that research and development funding under the national strategy will be "incorporated in the development of annual budget requests for Federal research agencies."

(5) *Research and development funding.—*

The Director shall, as the Director considers necessary, consult with the Director of the Office of Management and Budget and with the heads of such other elements of the Executive Office of the President as the Director considers appropriate, to ensure that the recommendations and priorities with respect to research and development funding, as expressed in the national strategy developed under this subsection, are incorporated in the development of annual budget requests for Federal research agencies.

Source: www.govtrack.us/congress/bills/117/hr7776/text [16]

National Strategy Timeline

As with most projects involving the federal government, the timeline on this national strategy is slow and methodical. Within one year of the enactment of this NDAA, the Director of the National Institute of Standards and Technology is instructed to brief members of Congress as well as the President on the progress and findings of this initiative. Furthermore, the Director must release a report to the public within one year following the completion of the project.

(3) *Briefings to congress.—*

Not later than 1 year after the date of enactment of this Act, the Director of the National Institute of Standards and Technology shall offer a briefing to the relevant congressional committees on the progress and current findings from the project under this subsection.

(4) *Public report.—*

Not later than 12 months after the completion of the project under this subsection, the Director of the National Institute of Standards and Technology shall make public a report on the results and findings from the project.

Source: www.govtrack.us/congress/bills/117/hr7776/text[17]

Fortunately, this means there is still time to fight back. However, GOP members of Congress have betrayed the voters who elected a Republican majority in the House by pushing for the passage of an omnibus bill before the Christmas holiday, which would essentially strip the Republicans' leverage to defund projects like this and many others in 2023.

[16] https://www.govtrack.us/congress/bills/117/hr7776/text

[17] https://www.govtrack.us/congress/bills/117/hr7776/text

It is critical for the American public to make their voices heard in opposition to this national strategy to develop a digital enslavement system. Hopefully, the incoming Republican majority in the House will listen, grow a spine, and stand against this nationwide initiative to digitally monitor, track and control every aspect of Americans' lives.

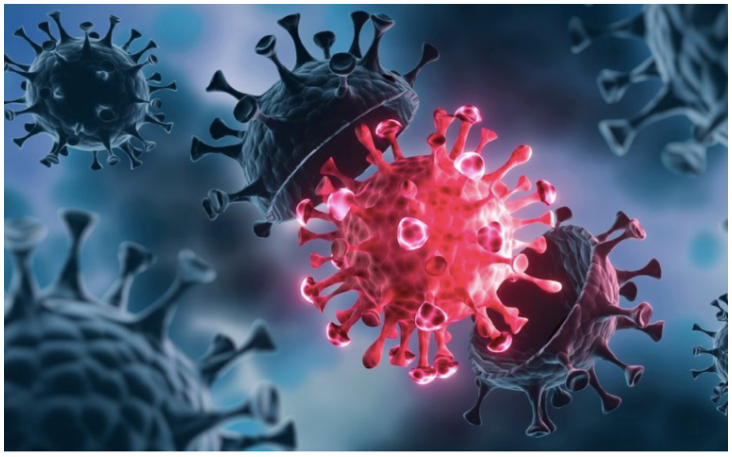
COREY LYNN

Part Eight:

DNA found in coronavirus was patented by Moderna 3 years before the pandemic

Researchers say 'there is a one-in-three-trillion chance Moderna's sequence randomly appeared through natural evolution.'

By Jack Bingham



According to emails between American and British scientists, top researchers privately acknowledged it was "likely" that COVID-19 escaped from a laboratory but feared publicly admitting as much would undermine "science and international harmony."

Just last month, *The Telegraph* reported that Sir Jeremy Farrar, director of the London-based Wellcome Trust, emailed National Institute of Allergy & Infectious Diseases (NIAID) director Dr. Anthony Fauci and then-National Institutes of Health director Dr. Francis Collins on February 2, 2020 to posit rapid evolution in a low-security lab, "accidentally creat[ing] a virus primed for rapid transmission between humans," as a "likely explanation" for COVID's origin.

"I share your view that a swift convening of experts in a confidence-inspiring framework is needed or the voices of conspiracy will quickly dominate, doing great potential harm to science and international harmony," Collins replied.

The discovery of cover-ups, both surrounding the origin of the coronavirus, as well as the nature of the COVID shots, has led to widespread skepticism surrounding normally trusted institutions and industries.

> "Now scientists find the virus contains a tiny chunk of DNA that matches sequence[s] patented by Moderna three years before the pandemic began," said Bartiromo. "Your reaction Stephane, what can you tell us?"
>
> "My scientists are looking into those data to see how accurate they are or not," replied Bancel.
>
> "As I've said before, the hypothesis that this came from a lab by accident is possible... human[s] make mistakes. It is possible that the Wuhan lab in China was working on virus enhancement, or gene modification, and then there was an accident where somebody was infected... it is possible."
>
> Regarding whether Moderna is indeed the patent holder to a DNA sequence found in the coronavirus, "the scientists are analyzing [the data] to know if it is real or not," added the CEO.
>
> According to an analysis of the data by the *Daily Mail*, the patented sequence appears in the "furin cleavage site located on the virus' spike protein," an area of particular interest to scientists as no other known member of the coronavirus family has such a site, and these mechanisms are responsible for the virus's heightened transmissibility.
>
> Moderna's patent, filed in February 2016, is part of a gene called MSH3 "that is known to affect how damaged cells repair themselves," the U.K. outlet noted. According to the filing, the company was deploying the patented sequence for cancer research.
>
> "The international team of researchers suggest the virus may have mutated to have a furin cleavage site during experiments on human cells in a lab," reported the *Daily Mail*. "They claim there is a one-in-three-trillion chance Moderna's sequence randomly appeared through natural evolution."

The genesis of the coronavirus pandemic has been a hotly contested issue for two years, with initial inquiries into a possible lab leak or intentional manufacturing of the virus being labeled "misinformation" and a "conspiracy theory."

While independent media outlets, including LifeSiteNews, consistently held the possibility that the coronavirus pandemic initiated from a lab, it was not until mid-2021 that mainstream media outlets began to acknowledge it as a possibility.

"TO WHOM IT MAY CONCERN"

After Moderna and Pfizer mRNA injections had been marketed as "vaccines" for over a year, a Bayer pharmaceutical executive admitted to the public that they are indeed a form of "gene" and "cell therapy" marketed as vaccines to make the shots more palatable to the public.

"We are really taking that leap [to drive innovation] – us as a company, Bayer – in cell and gene therapies ... ultimately the mRNA vaccines are an example for that cell and gene therapy. I always like to say: if we had surveyed two years ago in the public – 'would you be willing to take a gene or cell therapy and inject it into your body?' – we probably would have had a 95% refusal rate," stated Bayer Executive Stefan Oelrich.

"Our successes over these 18 months [the duration of the COVID 'pandemic'] should embolden us to fully focus much more closely on access, innovation and collaboration to unleash health for all, especially as we enter, on top of everything else that is happening, a new era of science... the Bio Revolution."

'Significant' evidence COVID-19 came from a lab, GOP report finds

There are indications that 'necessary safety protocols were not followed, risking the accidental outbreak of a pandemic,' and 'several researchers in the Wuhan lab were sickened with COVID-19-like symptoms.

Shutterstock

Tue May 25, 2021 - 3:55 pm EDT

1 https://www.lifesitenews.com/news/dna-found-in-coronavirus-was-patented-by-moderna-3-years-before-the-pandemic/
2 https://twitter.com/jordanschachtel/status/1497190731995357221?s=21
3 https://twitter.com/Perpetualmaniac/status/1497107545059520512
4 https://www.lifesitenews.com/news/significant-evidence-covid-19-came-from-a-lab-gop-report-finds/

"2019 Novel Coronavirus Vaccine" dated July 23 2019?- *Making a vaccine 6 months before the pathogen officially appeared?*

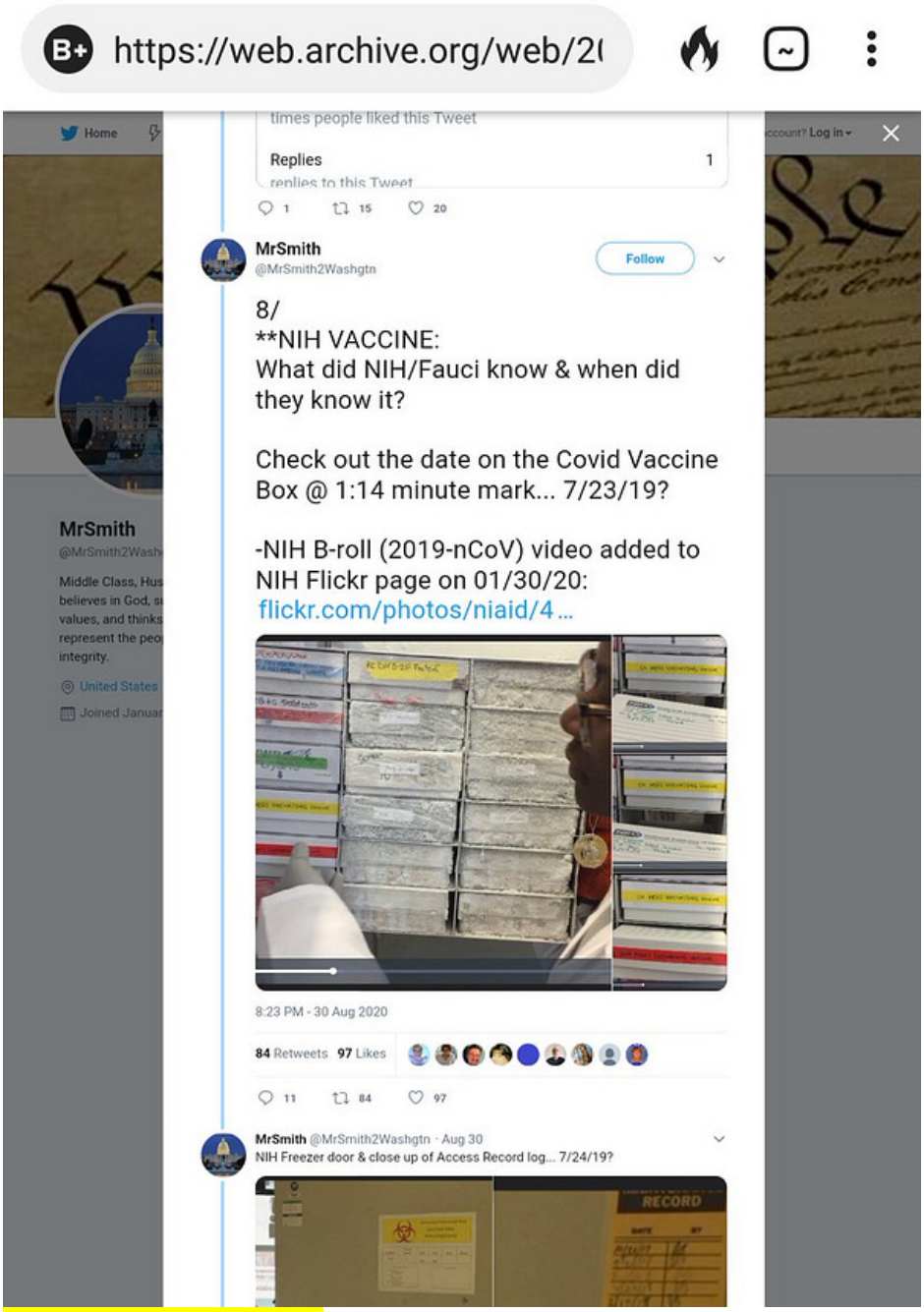
Igor Chudov **https://substack.com/profile/15579919-igor-chudov**
Mar 19, 2022

This article will show that ***work on "Novel Coronavirus Vaccine" greatly predated official emergence of the "Novel Coronavirus"****, creating a suspicion of how could they know about this pathogen* ***before*** *it officially appeared.*

It will also show that before the virus was officially known, the vaccine candidate for it was transferred to the person experimenting with adding HIV sequences to coronaviruses (Ralph Baric)

A tweet by @MrSmith2Washgtn prompted my interest.

MrSmith @MrSmith2Washgtn
21/ Reposting, since forced to remove #8 https://t.co/56boXGP3mE

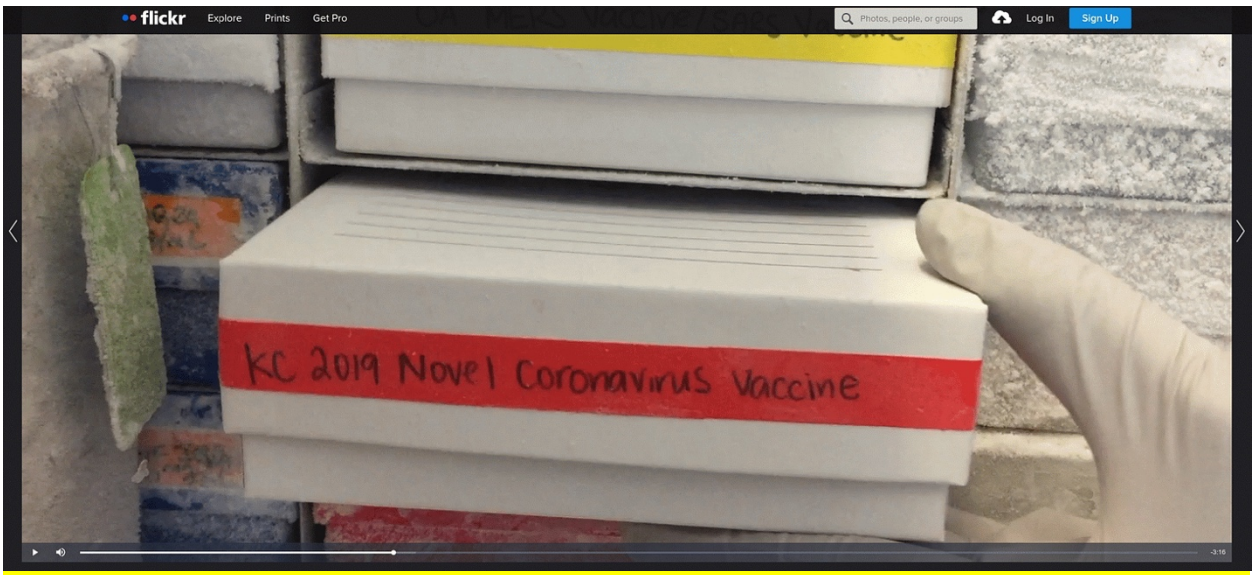


10:35 AM · Aug 14, 2021

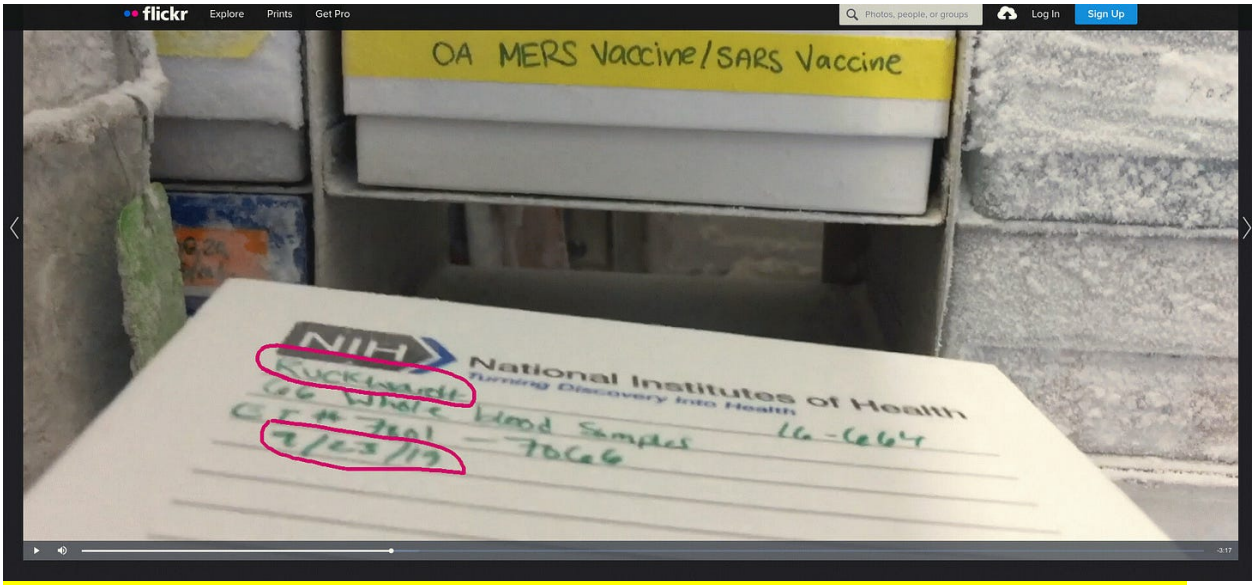
He referred to an interesting promotional B-roll video posted by NIH on Jan 30, 2020 about scientists working tirelessly to invent vaccine against "Novel Coronavirus".

https://www.flickr.com/photos/niaid/49465177603/

This video shows, at about 1:00 minute mark, a woman taking out from a freezer, and placing back, a box with vials labeled **"KC 2019 Novel Coronavirus Vaccine".**



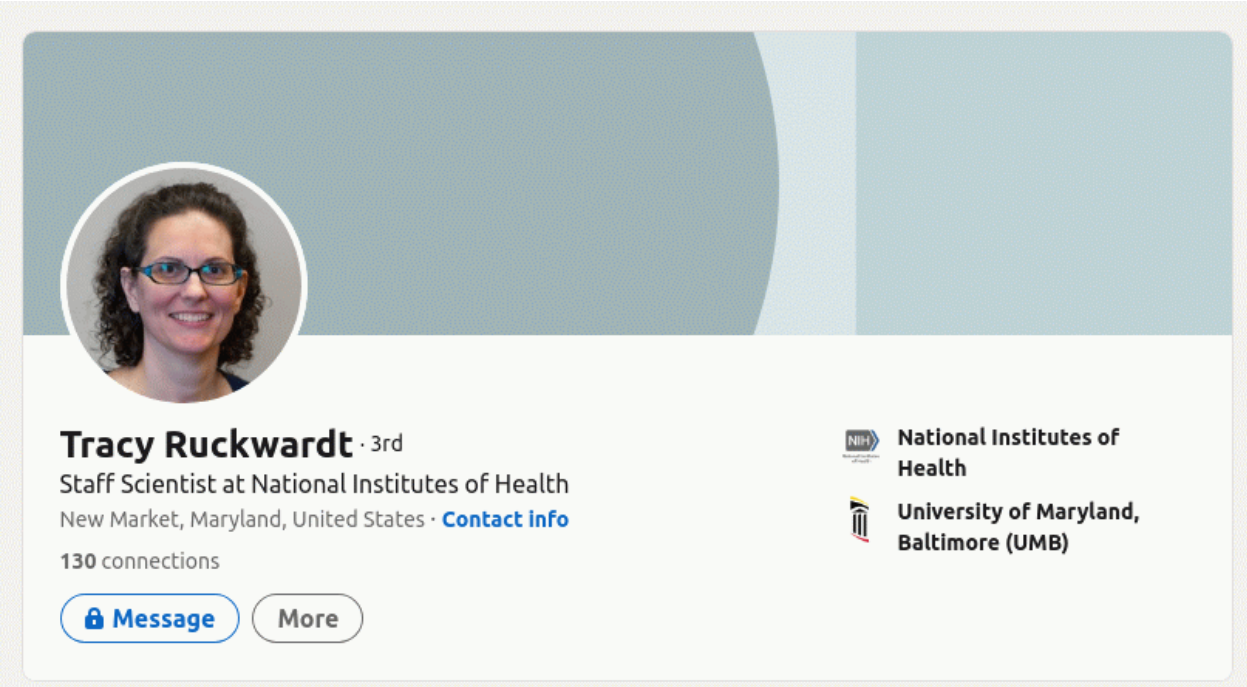
The weirdest part of this video is the following screengrab, showing the date of 7/23/2019 on this box of "2019 Novel Coronavirus vaccine"!



What? How can the "2019 Novel Coronavirus Vaccine" be dated 7/23/2019, when "Novel Coronavirus" Sars-Cov-2 was only "discovered" in December 2019?

The box has a tag "Ruckwardt", which sounds like a rare name, so I duckduckgoed it.

It refers to Tracy Ruckwardt, NIH scientist.



Looking Tracy up, I see that she is an author of several interesting articles that we will explore, such as this one.
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7581537/pdf/nihms-1616529.pdf

Nature
Author Manuscript
HHS Public Access

SARS-CoV-2 mRNA Vaccine Design Enabled by Prototype Pathogen Preparedness

Kizzmekia S. Corbett, Darin K. Edwards, [...], and Barney S. Graham

Additional article information

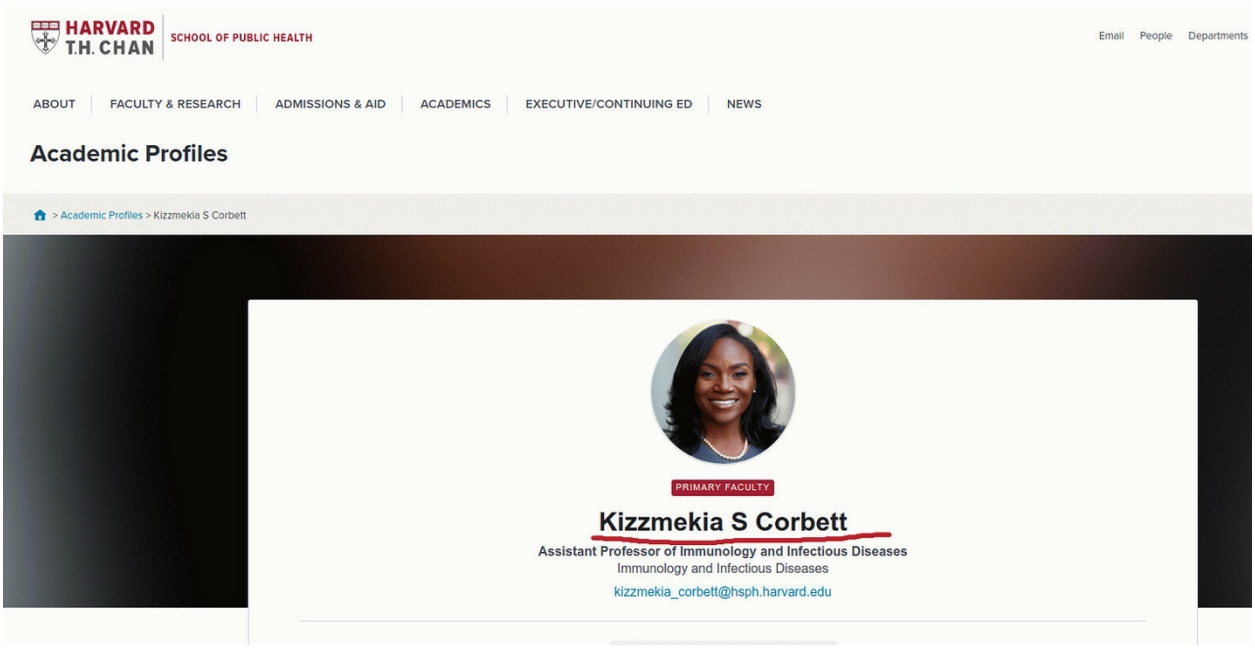
Associated Data

- Supplementary Materials
- Data Availability Statement

evidence of immunopathology. mRNA-1273 is currently in Phase 3 efficacy evaluation.

Since its emergence in December 2019, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has accounted for more than 16 million cases of Coronavirus Disease 2019 (COVID-19) diagnosed worldwide in its first 7 months[3]. SARS-CoV-2 is the third novel betacoronavirus in the last 20 years to cause substantial human disease; however, unlike its predecessors SARS-CoV and MERS-CoV, SARS-CoV-2 transmits efficiently from person-to-person. In absence of a vaccine, public health measures such as quarantining newly diagnosed cases, contact tracing, and mandating face masks and physical distancing have been instated to reduce transmission[4]. It is estimated that until 60-70% population immunity is established, it is unlikely for COVID-19 to be controlled well enough to

As I realized looking at the first screen grab with "KC 2019 Novel Coronavirus Vaccine", I realized that "KC" on the box with vials, stands for Tracy's coauthor of above study, "Kizzmekia Corbett":



...who is the scientist who appears in the video. Note that Kizzmekia is NOT the person opening and closing the freezer, as I thought initially. Ms Corbett can be seen in the back of the office when the "DNA" labeled vial is shaken.

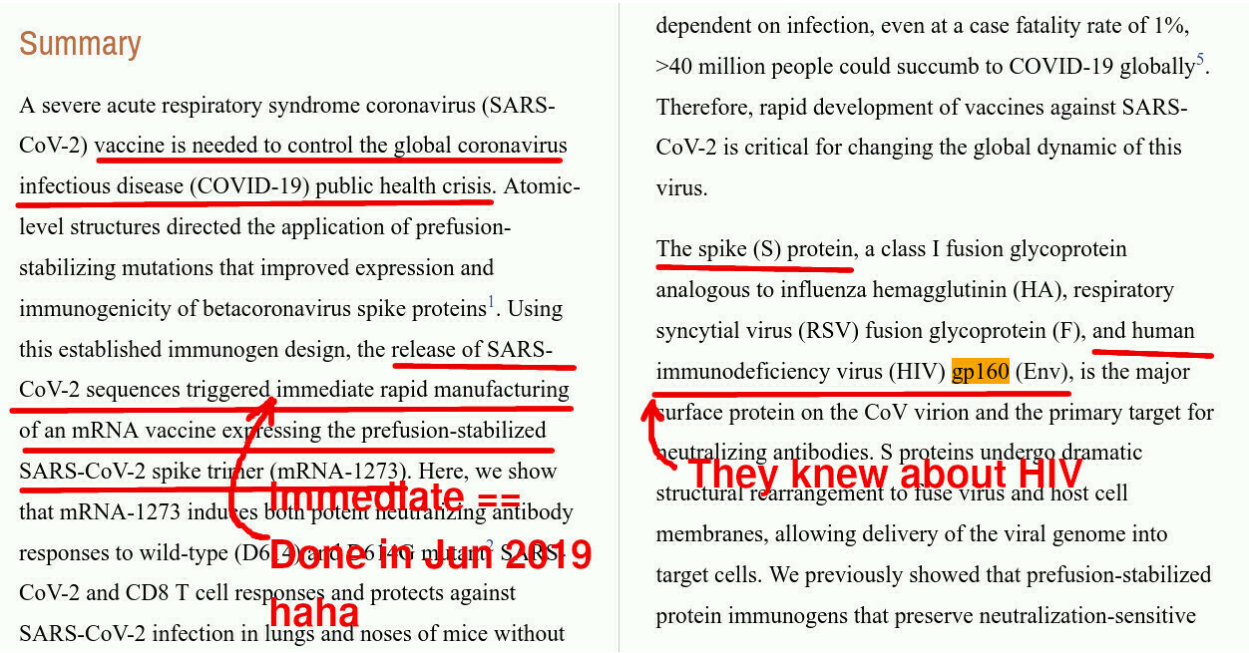
This is all great, right? We all love science, we applaud scientists, we want as much useful research to be done. All good, right?

Yeah, but WHY is the box dated 7/23/2019? How could they create a "novel coronavirus vaccine" before the official discovery of "Novel Coronavirus"?

Compared to all other boxes on the shelf, covered with many years of accumulated frost, Kizzmekia's vial box is clearly free of frost and was likely manipulated around the time the video was taken. The ONLY date on it is 7/23/2019. Weird.

Other boxes on the shelf are related to Corbett and Ruckwardt's article, such as box labeled with "HKU1 Neutralization Assay", "OA MERS", etc.

Then the person in the video handled agar sample labeled "WUCOV S-2P Fd PN1 1/2 OA 01/24/2020". (by the way, OA stands for Abiona Olubukola, another coauthor) This reminded me of something and in the previous freezer shot, we saw a box similarly labeled "KC COV S-2P Proteins" (top row 2nd box above) The box in the freezer has a lot of frost and looks like to have been stored for a while. Are they related?

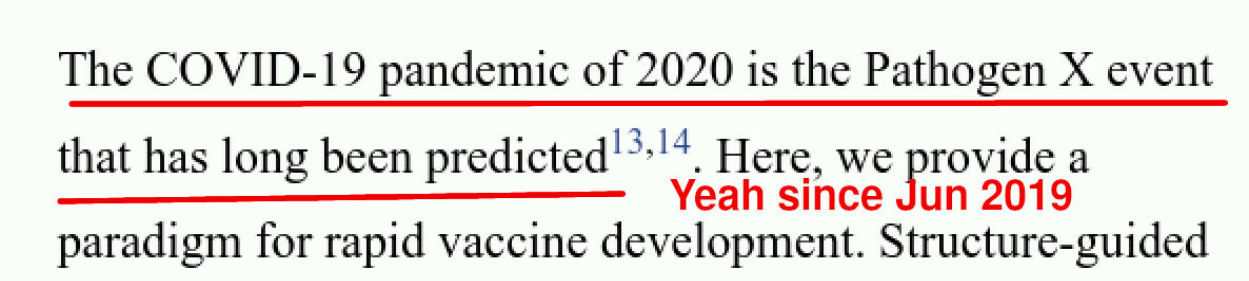


Summary

A severe acute respiratory syndrome coronavirus (SARS-CoV-2) vaccine is needed to control the global coronavirus infectious disease (COVID-19) public health crisis. Atomic-level structures directed the application of prefusion-stabilizing mutations that improved expression and immunogenicity of betacoronavirus spike proteins[1]. Using this established immunogen design, the release of SARS-CoV-2 sequences triggered immediate rapid manufacturing of an mRNA vaccine expressing the prefusion-stabilized SARS-CoV-2 spike trimer (mRNA-1273). Here, we show that mRNA-1273 induces both potent neutralizing antibody responses to wild-type (D614) and D614G mutant[2] SARS-CoV-2 and CD8 T cell responses and protects against SARS-CoV-2 infection in lungs and noses of mice without

dependent on infection, even at a case fatality rate of 1%, >40 million people could succumb to COVID-19 globally[5]. Therefore, rapid development of vaccines against SARS-CoV-2 is critical for changing the global dynamic of this virus.

The spike (S) protein, a class I fusion glycoprotein analogous to influenza hemagglutinin (HA), respiratory syncytial virus (RSV) fusion glycoprotein (F), and human immunodeficiency virus (HIV) gp160 (Env), is the major surface protein on the CoV virion and the primary target for neutralizing antibodies. S proteins undergo dramatic structural rearrangement to fuse virus and host cell membranes, allowing delivery of the viral genome into target cells. We previously showed that prefusion-stabilized protein immunogens that preserve neutralization-sensitive



The COVID-19 pandemic of 2020 is the Pathogen X event that has long been predicted[13,14]. Here, we provide a paradigm for rapid vaccine development. Structure-guided

mRNA Coronavirus Vaccine Candidate Transferred from NIAID to Ralph Baric of UNC on Dec 16 2019: ***These scientists seem to have worked very tirelessly PRIOR to the discovery of Sars-Cov-2, but knew a little bit too much about what ended up happening, PRIOR to the discovery. Here we see the Moderna vaccine candidate transferred from NIAID to Ralph Baric of UNC as of Dec 12, 2019:***

Here are some juicy quotes from the article:
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7581537/

"TO WHOM IT MAY CONCERN"

[redacted]

PUBLIC HEALTH SERVICE

MATERIAL TRANSFER AGREEMENT

This Material Transfer Agreement ("MTA") has been adopted for use by the National Institutes of Health, the Food and Drug Administration and the Centers for Disease Control and Prevention, collectively referred to herein as the Public Health Service ("PHS") in all transfers of research material (Research Material) whether PHS is identified below as its Provider or Recipient.

Providers: *National Institute of Allergy and Infectious Diseases, National Institutes of Health ("NIAID")*
ModernaTX, Inc ("Moderna")

Recipient: The University of North Carolina at Chapel Hill

1. Provider agrees to transfer to Recipient's Investigator the following Research Material:

   mRNA coronavirus vaccine candidates developed and jointly-owned by NIAID and Moderna.

2. THIS RESEARCH MATERIAL MAY NOT BE USED IN HUMAN SUBJECTS. The Research Material will only be used for research purposes by Recipient's Investigator in his/her laboratory, for the research project described below, under suitable containment conditions. This Research Material will not be used for commercial purposes such as screening, production or sale, for which a commercialization license may be required. Recipient agrees to comply with all Federal rules and regulations applicable to the Research Project and the handling of the Research Material.

   a. Are the Research Materials of human origin?

   ___ Yes X No

   b. If Yes in 2a, were Research Materials collected according to 45 CFR Part 46, "Protection of Human Subjects"?

   ___Yes Please provide Assurance Number: _____
   ___No

3. This Research Material will be used by Recipient's Investigator solely in connection with the following research project ("Research Project") described with specificity as follows (use an attachment page if necessary):

   Perform challenge studies with the mRNA vaccine in a Proprietary Info model as described on Exhibit A.

4. Upon a Provider's reasonable request, Recipient will furnish a status report to such Provider regarding the use of the Research Materials and any data or results generated therefore. In all oral presentations or written publications concerning the Research Project, Recipient will acknowledge Providers' contribution of this Research Material unless requested otherwise. To the extent permitted by law, Recipient agrees to treat in confidence, and not to disclose to third parties or use for any purpose other than the performance of the Research Project, for a period of three (3) years from the date of its disclosure, any of Providers' written information about this Research Material that is stamped "CONFIDENTIAL," except for information that was previously known to Recipient or that is or becomes publicly available or which is disclosed to Recipient without a confidentiality obligation. Any oral disclosures from Providers to Recipient shall be identified as being CONFIDENTIAL by notice delivered to Recipient within ten (10) days after the date of the oral disclosure. Notwithstanding the foregoing, all information disclosed by Providers relating to Proprietary Info Proprietary Info of the Research Material will be treated as CONFIDENTIAL information as set forth above, whether or not marked or otherwise identified as "confidential." Recipient may publish or otherwise

publicly disclose the results of the Research Project, but if Providers have given CONFIDENTIAL information to Recipient such public disclosure may be made only after Providers have had thirty (30) days to review the proposed disclosure to determine if it includes any CONFIDENTIAL information, except when a shortened time period under court order, law (including the North Carolina Public Records Act), or the Freedom of Information Act pertains. Recipient will comply with all requests to delete CONFIDENTIAL information from any proposed publication or presentation; provided, that Providers agree to allow use of sufficient information regarding the identity and properties of the Research Material to reasonably enable publication of the results of the Research Project.

5. This Research Material represents a significant investment on the part of Providers and is considered proprietary to Providers. Recipient's Investigator therefore agrees to retain control over this Research Material and further agrees not to transfer the Research Material to other people not under her or his direct supervision without advance written approval of Provider. Providers reserve the right to distribute the Research Material to others and to use it for their own purposes. When the Research Project is completed or three (3) years have elapsed, whichever occurs first, the Research Material will be disposed of as directed by Providers.

6. This Research Material is provided as a service to the research community. IT IS BEING SUPPLIED TO RECIPIENT WITH NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR

"TO WHOM IT MAY CONCERN"

[redacted]

publicly disclose the results of the Research Project, but if Providers have given CONFIDENTIAL information to Recipient such public disclosure may be made only after Providers have had thirty (30) days to review the proposed disclosure to determine if it includes any CONFIDENTIAL information, except when a shortened time period under court order, law (including the North Carolina Public Records Act), or the Freedom of Information Act pertains. Recipient will comply with all requests to delete CONFIDENTIAL information from any proposed publication or presentation; provided, that Providers agree to allow use of sufficient information regarding the identity and properties of the Research Material to reasonably enable publication of the results of the Research Project.

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7. Inventorship of any inventions or discoveries arising from the use of the Research Material hereunder ("Inventions"), shall be determined according to U.S. patent law. Ownership shall follow inventorship. Recipient will promptly disclose to Moderna in writing any Inventions. Proprietary Info Proprietary Info Proprietary Info Unless prohibited by law from doing so, including the North Carolina Tort Claims Act, Recipient agrees to hold the United States Government harmless and to indemnify the Government for all liabilities, demands, damages, expenses and losses arising out of Recipient's use for any purpose of the Research Material.

8. The undersigned Providers and Recipient expressly certify and affirm that the contents of any statements made herein are truthful and accurate.

9. This MTA shall be construed in accordance with Federal law as applied by the Federal courts in the District of Columbia.

SIGNATURES BEGIN ON NEXT PAGE

MATERIAL TRANSFER AGREEMENT

SIGNATURE PAGE

FOR RECIPIENT:

Recipient's Investigator

Ralph Baric, PhD
Professor

Date: 12/12/2019

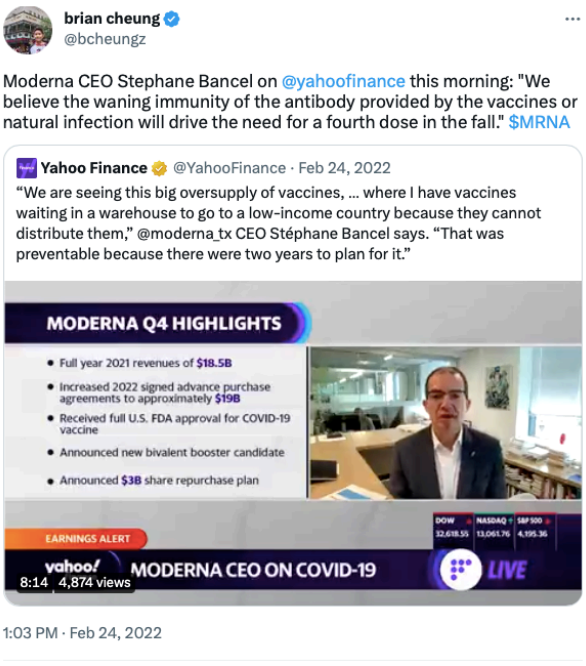
Duly Authorized

Jacqueline Quay
Director, Licensing & Innovation Support, OTC

Date: 12/16/19

"TO WHOM IT MAY CONCERN"

https://twitter.com/jordanschachtel/status/1497190731995357221?s=21



https://twitter.com/jordanschachtel/status/1497190731995357221?s=21

Part Nine:

COVID-19 injectable bioweapons as case study in legalized, government-operated domestic bioterrorism.

Or: why there won't be any civil suits, or compensatory damages for injured victims or survivors of dead victims.

By - Katherine Watt

Posted June 9, 2022. Last updated June 24, 2022.

This is a reworking of information posted previously, including at the bottom of the American Domestic Bioterrorism Program post.

The author writes, "*Since first realizing the implications of the many Congressional statutes and Health and Human Services regulations adopted to create and operate the bioterrorism program, mostly between 1997 and the present, I've been intermittently finding the specific citations for each statement while researching related issues.*

Some statements are simply logical deductions from the first premise, corroborated by the observable actions and inactions of Food and Drug Administration officials as the observable injuries and deaths mount up in the American people.

Others are specifically written into the laws, but I don't yet have the citations because I've prioritized my research time investigating other issues related to the bioterrorism program.

I'm posting the information as I understand it today, despite those limitations, in case it's useful for readers who also follow FDA Vaccine and Related Biological Products Advisory Committee (VRBPAC) reporting by Toby Rogers, Igor Chudov, Steve Kirsch, Jessica Rose, and others."

"They continue to rightly raise public awareness and alarm about ***FDA's ongoing failure to protect the public from the Emergency Use Authorized (EUA) products.***

But they don't address the main reason why FDA is acting as it is*.*

FDA is not pulling the EUA products from the market or stopping the 'vaccination' campaign because Health and Human Services Secretary Xavier Becerra and FDA Commissioner Robert Califf are running the US government's bioterrorism program jointly with Defense Secretary Lloyd Austin, Department of Justice Attorney General Merrick Garland, Department of Homeland Security Secretary Alejandro Majorkas, Pfizer CEO Albert Bourla, Moderna CEO Stephane Bancel, and World Health Organization Director-General Tedros Adhanom Ghebreyesus."

Main Premise

*Use of EUA-covered medical countermeasure (MCM) products including masks, PCR tests, mRNA and DNA injections, and other drugs, devices and biologics, once designated as such by the Secretary of Health and Human Services (March 10, 2020, retroactive to February 4, 2020) "****shall not be considered to constitute a clinical investigation." 21 USC 360bbb-3(k). EUA law, adopted 1997 and amended 2003, 2004, 2005, 2013, 2017.***

This is true ***no matter how untested, unmonitored, unsafe, or ineffective they are, no matter whether their harmfulness to human health and uselessness for infection-control are known before use, or discovered afterward****.*

***Legal implications derived from the main premise**:*

- ***There is no stopping condition.***
- *EUA products* ***are exempt from laws regulating researcher use of investigational, experimental drugs, devices and biologics on human beings.***
- *EUA products* ***are exempt from laws regulating physician use of approved drugs, devices and biologics as medical treatments for patients.***
- *There are* ***no manufacturers of experimental products*** *(EUA products are not part of any clinical investigation, and therefore not experimental.)*
- *There are* ***no government or private contracts for purchase of experimental products; there are only contracts for 'large scale vaccine manufacturing demonstrations.'***
- ***There is no act of administration of any experimental products.***
- *There are* ***no nurses or pharmacists administering experimental products****.*
- *There are* ***no human subjects (of experiments) or patients (of physicians providing treatment) receiving experimental products: no victims****.*
- ***There is no party responsible for the wellbeing of recipients after administration of EUA products****.*
- ***There is no treatment group and no control group.***
- ***Human beings administering*** *EUA products have* ***no informed consent obligations to provide information about ingredients, risks, benefits, alternatives, or the option to accept or refuse the products. See 21 USC 360bbb-3(e)(1)(A)(ii)) waiving informed consent for unapproved products (2004); 21 USC 360bbb-3(e)(2)(A) waiving informed consent for unapproved use of an approved product (2004); 21 USC 355(i)(4) waiving informed consent for experimental products classified by HHS as 'minimal risk' drugs (2016); 21 USC 360j(g)(3) waiving informed consent for experimental 'minimal risk' devices (2016).***

- ***Human beings receiving** EUA products **have no informed consent rights to receive information about ingredients, risks, benefits, alternatives, or the option to accept or refuse the products. See citations, bullet point above.***
- *There are **no Institutional Review Boards supervising administration of the experimental products.***
- ***There are no safety standards for EUA products.***
- ***There are no efficacy standard for EUA products. See 21 USC 360bbb-3(c)(2)(A), 1997, 2004, re: 'may be effective'***
- *There are **no clinical investigators studying the effects of EUA products on human subjects.***
- *There are **no doctors, nurses, or other treatment providers providing experimental treatment to their patients subject to the Hippocratic Oath ("first do no harm") using EUA products.***
- *There is **no coordinated, public, federal government monitoring of recipients after receiving the products for adverse effects and deaths.***
- *There is **no coordinated, public, federal government data collection or analysis.***
- *There is **no legal requirement for medical supervision during product administration.***
- *There is **no legal requirement for recipient monitoring after product administration.***
- ***'Real world evidence'** — **mass administration of products to general public, followed by collection of private/proprietary information about the effects, from health insurance systems, government databases (Medicare, Medicaid, Defense Medical Epidemiology Database, Veterans Health Administration) and other private databases — is authorized for the purposes of FDA regulatory decisions. See 21 USC 355g. 2016.***

- *There is no requirement for individual prescriptions to be written prior to dispensing EUA products, **and products dispensed without prescriptions "shall not be deemed adulterated or misbranded**." See 21 USC 360bbb-3a(d). 2013.*
- ***Manufacturers, as contractors, are considered HHS employees for purposes of legal immunity under Federal Tort Claims Act. See 42 USC 247d-6a(d)(2)(A).***
- ***DOD is authorized to contract with pharmaceutical corporations to conduct 'prototype' experiments on the general public, and under such contracts, is exempt from legal obligation to comply with Good Clinical Practices or other FDA regulations. See 10 USC 2371b (2015), renumbered 10 USC 4022 (Jan. 1, 2021, effective Jan. 1, 2022)***
- *One of the factors to be considered by HHS secretary in making determinations about EUA products (qualified security countermeasures) and use of Special Reserve Fund/Strategic National Stockpile appropriations to procure them is **"whether there is a lack of a significant commercial market for the product at the time of procurement, other than as a security countermeasure."** See 42 USC 247d-6b (c)(5)(B)(iii)*
- ***There are no required standards for quality-control in manufacturing; no inspections of manufacturing procedures; no prohibition on wide variability among lots; no prohibition on adulteration; and no required compliance with Current Good Manufacturing Practices. EUA products, even though unregulated and non-standardized, "shall not be deemed adulterated or misbranded." See 21 USC 360bbb-3a(c). 2013.***
- ***There are no labeling requirements regarding the contents or ingredients in EUA products. 21 USC 360bbb-3(e)(2)(B)(ii). 2004.***
- ***There is no limitation of administration of EUA products past their expiration dates.***
- ***There cannot be clinical trial fraud, because there are no clinical investigations, no investigational drugs, no investigators and no human subjects.***

- ***There are no marketing standards.***
- ***There cannot be consumer fraud, because the only legal parties to the financial transactions are the US government (DOD) as buyer; the US government (HHS) as regulator authorizing exemptions from consumer protection laws that otherwise apply to medical products; and the pharmaceutical corporations as sellers, contracted to develop and manufacture the products. There are no commercial pharmaceutical products, no commercial marketplace, and no commercial market consumers.***
- ***There is no access to courts for judicial review of the facts or law relating to HHS Secretary declarations of EUA products, which are committed to agency discretion. See 42 USC 247d-6d(b)(7). 2005.***
- ***There is no access for plaintiffs, to civil courts for judicial review, and no entity to whom civil liability can attach, for injuries and deaths caused by declared covered countermeasures, unless and until FDA/HHS and/or Attorney General/DOJ file enforcement action against manufacturers and prove willful misconduct proximate to injury or death, but HHS and DOJ have operated the EUA product program together with the manufacturers since inception, and will not prosecute their co-conspirators. See 42 USC 247d-6d. 2005.***
- *Even if there were access to courts for judicial review, and a fact-finder found evidence of harms caused by administration of products to recipients, and even evidence that those who caused the harms, by developing, manufacturing, distributing and/or administering the EUA products, knew the EUA products were toxic and knew their own actions were harmful,* ***"just following orders" is an authorized, legal defense. See 42 USC 247d-6d(c)(4). 2005.***

Why understanding Gain of Function is Important

GOF Reveals that SARS-CoV-2 is Man Made & Paid for by U.S Taxpayers

1999 U.S. Dept. of Health & Human Services (**HHS**) funds research amplifying the infectious character of Coronaviruses.

2000 In May* **Ralph Baric** successfully uses reverse genetics (cDNA**) to rescued infectious clone*** of SARS-CoV **Urbani.**

2002 In April Christopher M Curtis, Boyd Young & Ralph **Baric** file a **patent** for a recombinant (**chimeric**) DNA means of producing "an infectious, replication defective, coronavirus." Funded by **NIH** Grant GM63228.

Dr. Shi **Zhengli** and colleagues increase infectivity by **combining** an **HIV** pseudovirus with SARS-CoV-1.

2003 Dr. Ralph **Baric** at UNC Chapel Hill receives NIH grant AI23946-08 officially classified as affiliated with **NIAID**.

Baric works on synthetically **altering Coronaviridae.**

2006 Chinese**** researchers combine HCV, HIV-1, SARS-CoV-1 & **SARS-CoV-2**.

* U.S. Provisional Application No. 60/206,537, filed May 21, 2000
** Complimentary DNA is Reverse Transcription (mRNA->DNA) frequently using Moloney murine leukemia virus. ***https://www.pnas.org/content/100/22/12995
**** Huang Q, Cheng Y, Guo Q, Li Q. Preparation of a Chimeric Armored RNA as a Versatile Calibrator for Multiple Virus Assays. Clinchem 2006; 52(7):1446-1448 and Supplement A.

Why understanding Gain of Function is Important

2007 **NSF** Grant IIS-0513650 (Italy, France and Indiana University) study addresses FIRST CRITICAL STEP to control a pandemic - **shut down International Travel**. Given this knowledge why did Fauci tell Trump a Travel Ban was unnecessary?

2011 Scientists express **Concerns** about **GoF** after Labs in **Wisconsin** and the **Netherlands mutate** already **lethal H5N1 Asian Avian Influenza Virus (Bird Flu) increasing infectivity.**

2013 Middle East Respiratory Virus (**MERS**) outbreak with 30-40% fatality in Saudi Arabia (**2014**) and South Korea (**2015**). Rhesus macaques show early treatement with interferon-α2b and ribavirin critical to treatment success.

Baric* and Chinese scientists isolate 3 coronaviruses from bats with **HKU4** spike protein - unable to infect human cells.

2014 **CDC** accidentally **exposes workers** to **Anthrax; ships deadly flu virus. NIH** finds 50-year old forgotten vials of **smallpox.**

Obama Administration halts Gain-of-Function Research

* Yang Y...Baric RS, et al. Receptor usage and cell entry of bat coronavirus HKU4 provide insight into bat-to-human transmission of MERS coronavirus. PNAS 2014;111(34):12516-12521. Funded with NIH grants RO1AI089728 & R21AI109094.

Inform

Why understanding Gain of Function is Important

2015 Dr. **Zhengli** et al "**reengineered HKU4 spike** aiming to build its capacity **to infect human cells**." "To this end, we introduced two single mutations...mutations in these motifs in coronavirus spikes have demonstrated **dramatic** effects on viral entry into human cells."

Baric and Zhengli announce they can make a more dangerous, virulent and infectious virus.

2017 ***Gain-of-Function Research Ban Lifted***

2018 **Zhengli** presents research at Shanghai Jiao Tong University on 14 Nov. 2018 entitled "Studies on Bat Coronavirus and its cross-species infection." This presentation has since been **deleted** from the University website.

2019 Summer **deletion** of Wuhan Institute of Virology Corona Virus data bank.

December 31 Wuhan Municipal Health Commission report** discussing COVID-19 pneumonia - **deleted**.

* Zhengli S, Baric RS, et sl. Two Mutations Were Critical for Bat-to-Human Transmission of Middle East Respiratory Syndrome Coronavirus. J Virol.2015;89(17):9199-9123. Funded by NIH grants RO1AI089728, RO1AI110700.
** Wuhan City Health Committee (WCHC). Wuhan Municipal Health and Health Commission's briefing on the current pneumonia epidemic situation in our city 2019 [updated 31 December 2019, 14 January 2020]. Available from: http://wjw.wuhan.gov.cn/front/web/showDetail/2019123108989

The second peak papers

Curious findings concerning the reads of academic papers in 2018 and 2019

Research by Anon1, Yuri Deigin, Billy Bostickson, and EricRQ

June, 2021

What is a "second peak paper"?

- Most papers reads "peak" just after publication. Thereafter the papers reads fall and flatten out. Some peak now and then for unknown reasons
- We started noticing that papers related to SARS-CoV-2 and/or SARS more generally, previous research, cited papers, furin cleavage sites, TMPRSS2, research on mice, porcine coronavirus etc.; peaked sometime from late 2018 to end of 2019, i.e. before the COVID-19 outbreak ("the findings")
- On the following slides we will present the findings in an aggregated overview, with the area of interest expanded, some observations, and then per paper
- We wonder who downloaded these papers, where were they, and why did they download the papers? Is this relevant and maybe significant?
- What do you think? Is it random noise, or echoes of a research project?

"TO WHOM IT MAY CONCERN"

The second peak papers

Research by Anon1, Yuri Deigin, Billy Bostickson, and EricRQ

Curious findings in the metrics of published scientific papers

May, 2021

After publication of a scientific peer-reviewed paper it is to be expected that there is activity reading abstracts, reading full text versions, and downloading pdfs of the paper for reference.

During June 2020 we noticed that a few papers related to coronavirus research are not following this expected development, but in addition to the first peak around the time of publication has a second peak 2018/2019. At first the papers noticed peaked late in 2019. After further work in 2021 we found that the second peak paper period runs from September 2018 to December 2019 – around 15 months in total. We have collected 22 papers so far that we qualify as second peak papers.

The criteria are as follows:

- No or virtually no reads (full text/pdf) since publication until September 2018
- Minimum 150 reads during any month

For all the papers included the timeline since publication can be shown as the below:

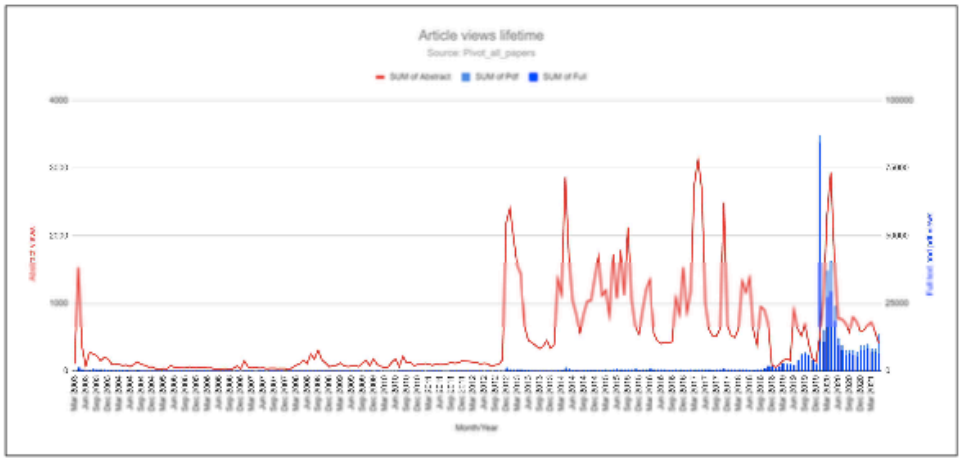


Figure 1: All views since publication

It is the read activity just prior to January 2020 that is of interest. When only showing the time period from 2018 to 2019 (excluding everything before 2018 and after 2019) the activity can be shows as the below:

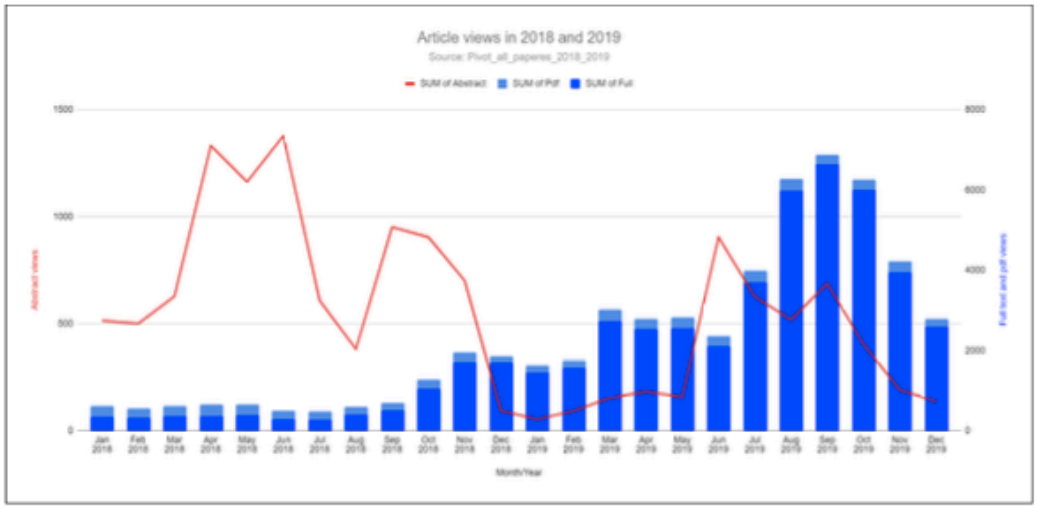


Figure 2: All views in 2018 and 2019, timeline/aggregated

As can be seen the characteristics (or "fingerprint") of a second peak paper is generally:

- High and fluctuation abstract read coming down to virtually no reads late in 2018
- Thereafter either of three peaks; late 2018/early 2019, mid 2019, or late 2019
- Virtually no pdf downloads, nearly all full text views
- Most are published on jvi.asm.org
- Reads have a big uptake from virtually no reads in the preceding years to high numbers, sometimes reaching 8-900 reads per month during the second peak
- Abstract reads flatten at near zero levels until May 2019 thereafter the reads peak before falling again to very low levels late 2019
- The reads peaks in September or October 2019 before rapidly declining

When showing synchronicity of the paper reads, the analysis present a clear wave pattern:

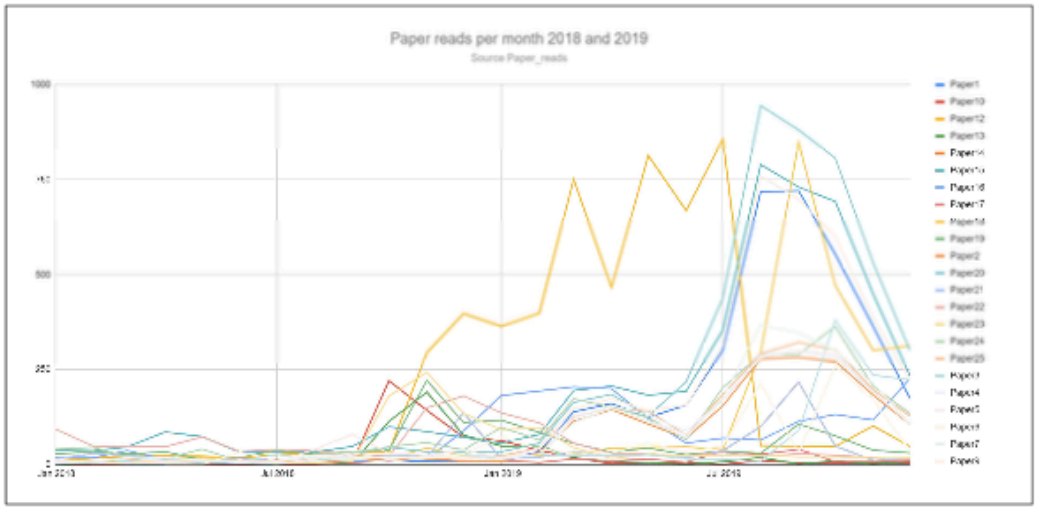


Figure 3: All views 2018 and 2019, timelined/per paper

"TO WHOM IT MAY CONCERN"

The views presented makes a few main points clear:

- There was an unexplained increase in reads from late 2018 to end of 2019
- The reads consists of six observations:
    - Virtually no reads for these papers prior to Quarter 3, 2018
    - Fluctuating high abstracts falling to near zero in December 2018
    - At the same time the full text/pdf reads paradoxically increases
    - Abstract reads are after several year long period of hugh and fluctuating read down to virtually zero for a 4 month period in 2019, before peaking and then declining
    - The reads of full text/pdfs are distributed in three distinct plateaus:
        - Quarter 3 to Quarter 1, 2019 - Plateau 1
        - Quarter 2, 2019 - Plateau 2
        - Quarter 3, 2019 - Plateau 3
    - The wave pattern is disturbed by two papers - one being the dominant read until July/August 2019, and then falling to near zero in September/October 2019 - and the other suddenly dominating the reads from the same time (July/August 2019) until September/October 2019 where this also falls to near zero reads
- All reads rapidly decline from September/October, or Quarter 4, 2019 onwards

Interpretations of this must acknowledge the following:

- The data does not show where the reads took place
- The data does not show who read the papers

There are indications, however, in the data that gives some ideas:

- The consistent wave-like pattern indicates that it is the same group of readers
- The fall in abstracts and the increased read in plateaus indicate a coordinated effort
- The sudden change abstracts peaking at the same time as one paper is no longer downloaded, while a new suddenly is, combined with a specific uptake in one abstract; and a somewhat more blurry Quarter 4, 2019 indicates an event followed by a response

Note: The data does not show what kind of event, but indicates that there was an anomaly in June 2019 (+/- 1 month). But also note that the massive reads following June 2019 does indicate a follow-up to this event.

The details:

- The dominant paper that suddenly dropped in July/August 2019 is *Receptor Usage and Cell Entry of Porcine Epidemic Diarrhea Coronavirus*, https://jvi.asm.org/content/89/11/6121
- The paper that the abstracts peaked for is *Discovery of Novel Bat Coronaviruses in South China That Use the Same Receptor as Middle East Respiratory Syndrome Coronavirus*, https://jvi.asm.org/content/92/13/e00116-18
- The paper that became the dominant paper since July/August 2019 is *Severe Acute Respiratory Syndrome (SARS) Coronavirus ORF8 Protein Is Acquired from SARS-*

"TO WHOM IT MAY CONCERN"

Related Coronavirus from Greater Horseshoe Bats through Recombination, https://jvi.asm.org/content/89/20/10532

The other peaking papers are listed below (papers noted in red has been dropped due to few reads):

#	Title	Jorunal	Year	Reference
1	Enhanced Virulence Mediated by the Murine Coronavirus, Mouse Hepatitis Virus Strain JHM, Is Associated with a Glycine at Residue 310 of the Spike Glycoprotein	JVI	2003	https://jvi.asm.org/content/77/19/10260/article-info
2	A Single Amino Acid at the Hemagglutinin Cleavage Site Contributes to the Pathogenicity but Not the Transmission of Egyptian Highly Pathogenic H5N1 Influenza Virus in Chickens	JVI	2013	https://jvi.asm.org/content/87/8/4786/article-info
3	Recombinant Receptor-Binding Domains of Multiple Middle East Respiratory Syndrome Coronaviruses (MERS-CoVs) Induce Cross-Neutralizing Antibodies against Divergent Human and Camel MERS-CoVs and Antibody Escape Mutants	JVI	2016	https://jvi.asm.org/content/91/1/e01651-16/article-info
4	A Single Point Mutation Creating a Furin Cleavage Site in the Spike Protein Renders Porcine Epidemic Diarrhea Coronavirus Trypsin Independent for Cell Entry and Fusion	JVI	2015	https://jvi.asm.org/content/89/15/8077/article-info
5	Isolation and Characterization of a Novel Bat Coronavirus Closely Related to the Direct Progenitor of Severe Acute Respiratory Syndrome Coronavirus	JVI	2016	https://jvi.asm.org/content/90/6/3253/article-info
6	Discovery of Novel Bat Coronaviruses in South China That Use the Same Receptor as Middle East Respiratory Syndrome Coronavirus	JVI	2018	https://jvi.asm.org/content/92/13/e00116-18/article-info
7	Cleavage of Group 1 Coronavirus Spike Proteins: How Furin Cleavage Is Traded Off against Heparan Sulfate Binding upon Cell Culture Adaptation	JVI	2008	https://jvi.asm.org/content/82/12/6078/article-info
8	Preventing Cleavage of the Respiratory Syncytial Virus Attachment Protein in Vero Cells Rescues the Infectivity of Progeny Virus for Primary Human Airway Cultures	JVI	2016	https://jvi.asm.org/content/90/3/1311/article-info
9	A Polymorphism within the Internal Fusion Loop of the Ebola Virus Glycoprotein Modulates Host Cell Entry	JVI	2017	https://jvi.asm.org/content/91/9/e00177-17/article-info
10	Severe Acute Respiratory Syndrome Coronavirus Protein 6 Accelerates Murine Coronavirus Infections	JVI	2007	https://jvi.asm.org/content/81/3/1220/article-info

11	Systematic Assembly of a Full-Length Infectious cDNA of Mouse Hepatitis Virus Strain A59	JVI	2002	https://jvi.asm.org/content/76/21/11065/article-info
12	Receptor Usage and Cell Entry of Porcine Epidemic Diarrhea Coronavirus	JVI	2015	https://jvi.asm.org/content/89/11/6121/article-info
13	Viral Expression of CCL2 Is Sufficient To Induce Demyelination in RAG1−/− Mice Infected with a Neurotropic Coronavirus	JVI	2005	https://jvi.asm.org/content/79/11/7113/article-info
14	Receptor Variation and Susceptibility to Middle East Respiratory Syndrome Coronavirus Infection	JVI	2014	https://jvi.asm.org/content/88/9/4953/article-info
15	Receptor Recognition Mechanisms of Coronaviruses: a Decade of Structural Studies	JVI	2015	https://jvi.asm.org/content/89/4/1954/article-info
16	Severe Acute Respiratory Syndrome Coronavirus Infection Causes Neuronal Death in the Absence of Encephalitis in Mice Transgenic for Human ACE2	JVI	2008	https://jvi.asm.org/content/82/15/7264/article-info
17	Switching Species Tropism: an Effective Way To Manipulate the Feline Coronavirus Genome	JVI	2003	https://jvi.asm.org/content/77/8/4528/article-info
18	Severe Acute Respiratory Syndrome (SARS) Coronavirus ORF8 Protein Is Acquired from SARS-Related Coronavirus from Greater Horseshoe Bats through Recombination	JVI	2015	https://jvi.asm.org/content/89/20/10532/article-info
19	The Coronavirus Spike Protein Is a Class I Virus Fusion Protein: Structural and Functional Characterization of the Fusion Core Complex	JVI	2003	https://jvi.asm.org/content/77/16/8801/article-info
20	Structural Characterization of Human Coronavirus NL63 N Protein	JVI	2017	https://jvi.asm.org/content/91/11/e02503-16/article-info
21	Receptor Variation and Susceptibility to Middle East Respiratory Syndrome Coronavirus Infection	JVI	2014	https://jvi.asm.org/content/88/9/4953/article-info
22	Middle East Respiratory Syndrome Coronavirus Nonstructural Protein 16 Is Necessary for Interferon Resistance and Viral Pathogenesis	mSphere	2017	https://msphere.asm.org/content/2/6/e00346-

				17/article-info
23	A Mouse Model for Betacoronavirus Subgroup 2c Using a Bat Coronavirus Strain HKU5 Variant	mBio	2014	https://mbio.asm.org/content/5/2/e00047-14/article-info
24	Human Coronavirus EMC Does Not Require the SARS-Coronavirus Receptor and Maintains Broad Replicative Capability in Mammalian Cell Lines	mBio	2012	https://mbio.asm.org/content/3/6/e00515-12/article-info
25	Tight Junction Protein Occludin Is a Porcine Epidemic Diarrhea Virus Entry Factor	JVI	2017	https://jvi.asm.org/content/91/10/e00202-17/article-info

Table 1: Overview of papers included

Note: At the time of writing (June 6, 2021) the jvi.asm.org website has changed and the details can no longer be accessed.

The second peak papers - some questions.

June 9, 2021

Dear reviewer,

Thanks a lot for taking the time to review the presentation and for commenting on the idea. It's much appreciated. The backdrop to this is in 2020 when some readers of academic papers noticed some curious peaks in downloads/reads of papers as shown in the graphs on the publisher websites. As a few of these readers eventually connected we aggregated the papers we had discovered and took the time to aggregate the findings. The main issue raised is in our view valid and also incredibly difficult to get past.

We will set out an explanation here.

As illustrated below the uptake in reads at the end of 2019 is almost invisible.

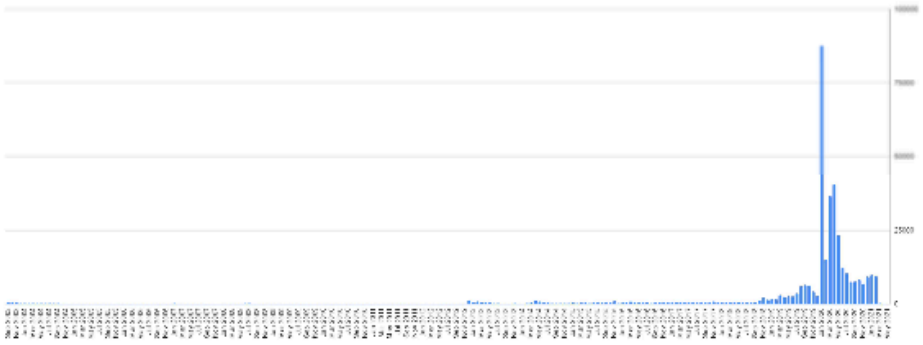


Figure 1: View of all papers included since publication until May, 2021

When removing all reads after January, 2020 the table takes on a different character, and the uptake that can be noticed just prior to 2020 becomes more curious..

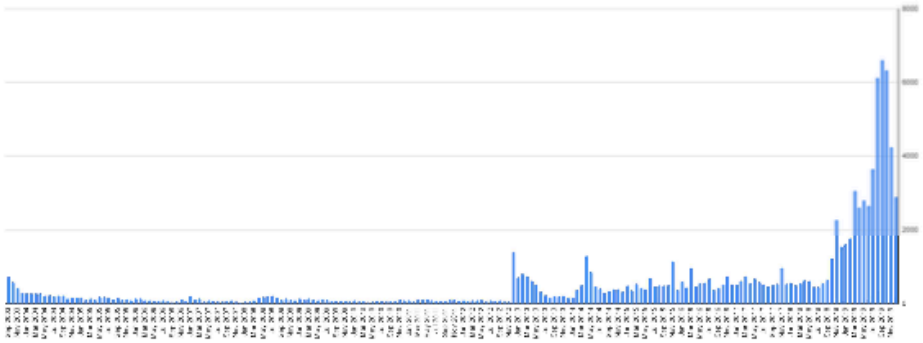


Figure 2: All reads since publication until December 31, 2019

In order to make this clearer we additionally increased the granularity to only look at 24 month prior to January 1, 2020.

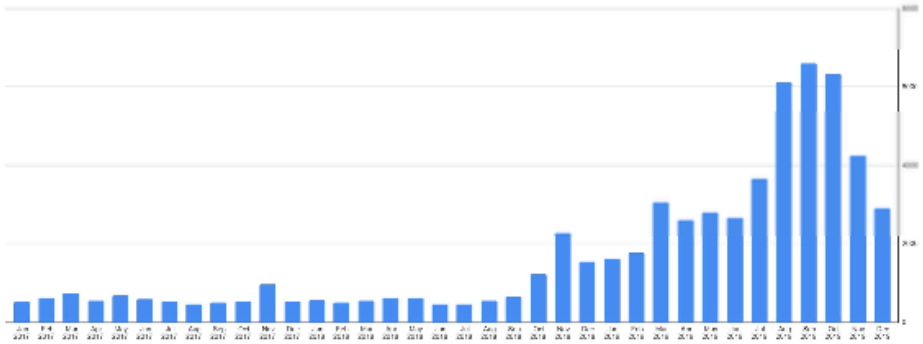


Figure 3: All reads between January 1, 2017 and December 31, 2019

As we were looking for a second peak since publication late in 2019, this "ridge" coming up and then declining prior to the end of 2019, was what we were trying to figure out what was. As work progressed we found that the peaks started earlier, around 3rd quarter 2018, or around 15 months prior to the end of 2019.

When splitting the time period in two 18 months periods - a total of 36 months prior to the end of December 2019, it looks like this:

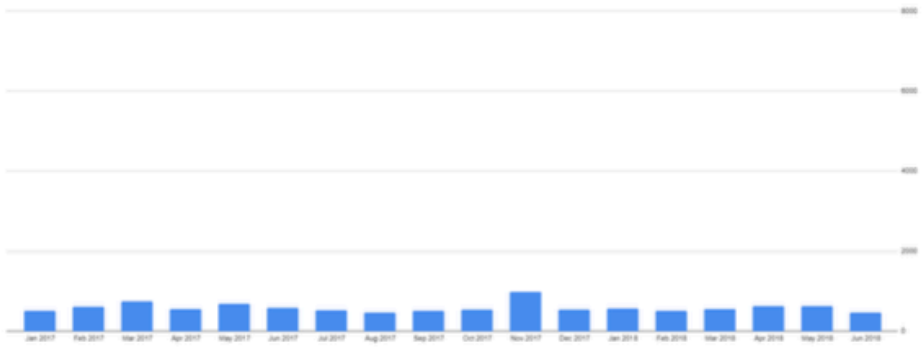


Figure 4: All reads from January 2017 to June 2018

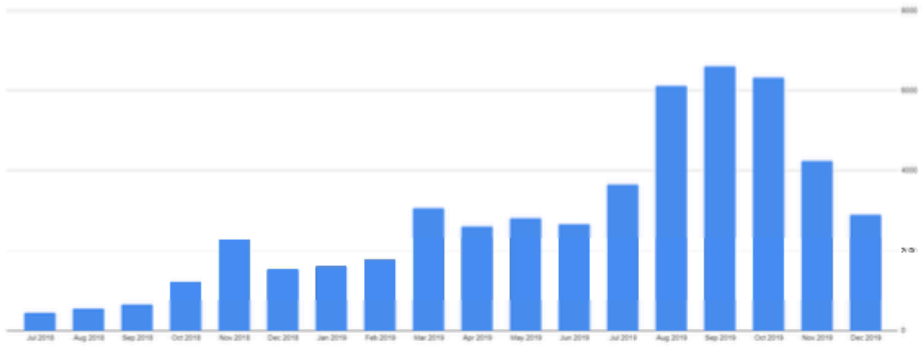


Figure 5: All reads from June 2018 to December 2019

This curious development is shown as the difference between Figure 4 and Figure 5. What is it that makes papers that had a stable read base since 2013, continuing on Figure 4, to suddenly peak late in 2019 as shown in Figure 5?

These are papers we have been looking for. And we have found around 21, and will soon add about 10 more.

As you point out there are issues here with bias, and "baselining" of the findings.

As it is we thought the papers themselves would be the only possible baseline (as shown in Figure 4).

"TO WHOM IT MAY CONCERN"

Inform

Italian Media - Daszik-Baric-Zhengli

In **2015**, Professor **Zhengli** works with Professor **Baric** to construct a hybrid virus.

American & Chinese scientists reengineer SARS virus Spike Protein.

Multiple Federal Agency Grants to Peter Daszak-EcoHealth

	AGENCY	AWARD ID	YEAR	AMOUNT AWARDED	TOTAL AMOUNT	RECIPIENT	DESCRIPTION
DOD	Defense Threat Reduction Agency (DOD)	HDTRA115C0041	2015 2016	$2,217,037.00 $2,262,641.00	$4,479,678.00	ECOHEALTH ALLIANCE	BASE PERIOD - PSC: AD92 IGF::OT::IGF
DOD	Defense Threat Reduction Agency (DOD)	HDTRA11710037	2017 2018	$721,249.00 $883,274.00	$1,604,523.00	ECOHEALTH ALLIANCE	SEROLOGICAL BIOSURVEILLANCE FOR SPILLOVER OF HENIPAVIRUSES AND FILOVIRUSES AT AGRICULTURAL AND HUNTING HUMANANIMAL INTERFACES IN PENINSULAR MALAYSIA
DOD	Defense Threat Reduction Agency (DOD)	HDTRA11910033	2019 2020	$998,437.00 $3,990,550.00	$4,988,987.00	ECOHEALTH ALLIANCE	REDUCING THE THREAT OF RIFT VALLEY FEVER THROUGH ECOLOGY, EPIDEMIOLOGY AND SOCIO-ECONOMICS
DOD	Defense Threat Reduction Agency (DOD)	HDTRA113C0029 *	2013 2014 2015	$1,371,611.00 $957,145.00 -$103,622.00	$2,225,134.00	ECOHEALTH ALLIANCE	BASE PERIOD
DOD	DOD	HDTRA11410029 (#1)	2014 2015 2016	$992,699.00 $978,784.00 $970,536.00	$2,942,019.00	ECOHEALTH ALLIANCE	UNDERSTANDING RIFT VALLEY FEVER IN THE REPUBLIC OF SOUTH AFRICA
DOD	Defense Threat Reduction Agency (DOD)	HDTRA11410029 (#2)	2017 2018	$996,147.00 $998,193.00	$1,994,340.00	ECOHEALTH ALLIANCE	UNDERSTANDING RIFT VALLEY FEVER IN THE REPUBLIC OF SOUTH AFRICA, CHANGE OF ACO TO ONR
DOD	Defense Threat Reduction Agency (DOD)	HDTRA12010016	2020	$4,912,818.00	$4,912,818.00	ECOHEALTH ALLIANCE	REDUCING THE THREAT FROM HIGH-RISK PATHOGENS CAUSING FEBRILE ILLNESS IN LIBERIA
DOD	Defence Threat Reduction Agency (DOD)	HDTRA11710064	2017 2018 2019 2020	$782,330.00 $2,203,917.00 $3,995,247.00 $1,509,531.00	$6,491,025.00	ECOHEALTH ALLIANCE	UNDERSTANDING THE RISK OF BAT-BORNE ZOONOTIC DISEASE EMERGENCE IN WESTERN ASIA
DOD	Defense Threat Reduction Agency (DOD)	HDTRA12010018	2020	$4,995,106.00	$4,995,106.00	ECOHEALTH ALLIANCE	CRIMEAN-CONGO HEMORRHAGIC FEVER: REDUCING AN EMERGING HEALTH THREAT IN TANZANIA.
DOD	Uniformed Services University of the Health Sciences (DOD)	HU0012010031	2020	$1,360,002.00	$1,360,002.00	ECOHEALTH ALLIANCE	STRATEGIC COORDINATION TO STRENGTHEN AFRICOM ONE HEALTH AND VETERINARY PROGRAMS FOR GLOBAL HEALTH ENGAGEMENT STRENGTHENING MULTI-SECTORAL APPROACHES TO BIODEFENSE AND BIOSURVEILLANCE IN THE CAUCASUS
DOD	Defense Threat Reduction Agency (DOD)	HDTRA12010029	2020	$2,956,309.00	$2,956,309.00	ECOHEALTH ALLIANCE	REDUCING THE THREAT OF MIDDLE EAST RESPIRATORY SYNDROME CORONAVIRUS AND AVIAN INFLUENZA IN JORDAN&STRENGTHENING REGIONAL DISEASE SURVEILLANCE CAPACITY
HHS	National Institutes of Health (HHS)	R01TW005869	2008 2009 2010 2011 2012	$697,356.00 $1,001,985.00 $763,008.00 $761,374.00 $501,437.00	$3,725,160.00	ECOHEALTH ALLIANCE	THE ECOLOGY, EMERGENCE AND PANDEMIC POTENTIAL OF NIPAH VIRUS IN BANGLADESH
HHS	National Institutes of Health (HHS)	2D8AI067549	2007 2009 2010	$130,950.00 $180,944.00 $130,950.00	$442,844.00	ECOHEALTH ALLIANCE	RISK FOR FUTURE OUTBREAKS OF HENIPAVIRUSES IN SOUTH ASIA
HHS	National Institutes of Health (HHS)	R56TW009502 *	2012	$300,000.00	$300,000.00	ECOHEALTH ALLIANCE	COMPARATIVE SPILLOVER DYNAMICS OF AVIAN INFLUENZA IN ENDEMIC COUNTRIES
HHS	National Institute of Allergy and Infectious Diseases (HHS - NIH)	R01AI110964 *	2014 2015 2016 2017 2018 2019	$666,442.00 $630,445.00 $611,090.00 $597,112.00 $583,646.00 $661,980.00	$3,748,715.00	ECOHEALTH ALLIANCE	UNDERSTANDING THE RISK OF BAT CORONAVIRUS EMERGENCE
HHS	CDC OFFICE OF ACQUISITION SERVICES (HHS)	HHSD2002011M41641P	2011 2013 2016	$59,740.00 $45,000.00 $5,446.00	$99,294.00	ECOHEALTH ALLIANCE	BUSHMEAT
HHS	National Institutes of Health (HHS)	R01AI079231	2008 2009 2010 2011 2012	$534,989.00 $535,156.00 $480,423.00 $510,005.00 $518,980.00	$2,579,553.00	ECOHEALTH ALLIANCE	RISK OF VIRAL EMERGENCE FROM BATS
HHS	NIH NATIONAL INSTITUTE OF ALLERGY AND INFECTIOUS DISEASES (HHS)	U01AI151797	2020	$1,546,744.00	$1,546,744.00	ECOHEALTH ALLIANCE	UNDERSTANDING RISK OF ZOONOTIC VIRUS EMERGENCE IN EID HOTSPOTS OF SOUTHEAST ASIA
HHS	Department of Health and Human Services (HHS)	U01AI153420	2020	$580,858.00	$580,858.00	ECOHEALTH ALLIANCE	STUDY OF NIPAH VIRUS DYNAMICS AND GENETICS IN ITS BAT RESERVOIR AND OF HUMAN EXPOSURE TO NIV ACROSS BANGLADESH TO UNDERSTAND PATTERNS OF HUMAN OUTBREAKS

"TO WHOM IT MAY CONCERN"

Federal Grants Spanning Decades

NSF	National Science Foundation (NSF)	1618919	2016	$190,223.00	$499,897.00	ECOHEALTH ALLIANCE	ECOHEALTH NET 2.0: A ONE HEALTH APPROACH TO DISEASE ECOLOGY RESEARCH & EDUCATION
			2017	$309,674.00			
	NSF	1714394	2017	$138,000.00	$97,750.00	N/A REDACTED DUE TO PII	DEVELOPING A QUANTITATIVE MODEL OF ECOHEALTH JUSTICE: A CASE STUDY OF MADISON AND MILWAUKEE, WI
			2020	-$40,250.00			
	Division of Environmental Biology (NSF)	1015791	2010	$29,109.00	$72,002.00	ECOHEALTH ALLIANCE	COLLABORATIVE RESEARCH: THE COMMUNITY ECOLOGY OF VIRAL PATHOGENS - CAUSES AND CONSEQUENCES OF COINFECTION IN HOSTS AND VECTORS
			2012	$13,948.00			
			2013	$14,293.00			
			2014	$14,652.00			
	NSF	1257513	2012	$22,890.00	$22,890.00	ECOHEALTH ALLIANCE	US-CHINA ECOLOGY AND EVOLUTION OF INFECTIOUS DISEASES COLLABORATIVE WORKSHOP; KUNMING, CHINA - OCTOBER, 2012
	DIVISION OF ENVIRONMENTAL BIOLOGY (NSF)	955897	2010	$99,611.00	$497,121.00	ECOHEALTH ALLIANCE	ECOHEALTHNET: ECOLOGY ENVIRONMENTAL SCIENCE AND HEALTH RESEARCH NETWORK
			2011	$98,673.00			
			2012	$99,919.00			
			2013	$98,992.00			
			2014	$99,926.00			
	NSF	0622391	2006	$503,291.00	$932,085.00	ECOHEALTH ALLIANCE	PREDICTING SPATIAL VARIATION IN WEST NILE VIRUS TRANSMISSION
			2008	$428,794.00			
	NSF	0826779	2008	$468,673.00	$468,673.00	ECOHEALTH ALLIANCE	HSD: COLLABORATIVE RESEARCH: HUMAN-RELATED FACTORS AFFECTING EMERGING INFECTIOUS DISEASES
USAID	USAID	AID486A1300005	2013	$1,999,203.00	$2,499,147.00	ECOHEALTH ALLIANCE	LAND USE CHANGE & DISEASE EMERGENCE
			2016	$499,944.00			
DHS	SCI TECH ACQ DIV (DHS)	70RSAT19CB0000013	2019	$566,274.00	$566,274.00	ECOHEALTH ALLIANCE	RAPID EVALUATION OF PATHOGENS TO PREVENT EPIDEMICS IN LIVESTOCK (REPEL) PROJECT TO APPLY BIOLOGICAL-BASED, PATHOGEN AGNOSTIC MEDICAL COUNTERMEASURE VACCINE AND DIAGNOSTIC PLATFORMS TO DEVELOP FOREIGN ANIMAL AND EMERGING ZOONOTIC LIVESTOCK DISEASE VAC
	OFF OF HEALTH AFFAIRS ACQ DIV (DHS)	HSHQDC16C00113	2016	$271,272.00	$1,005,956.00	ECOHEALTH ALLIANCE	IGF::OT::IGF GROUND TRUTH
			2017	$327,782.00			
			2018	$406,902.00			
	SCI TECH ACQ DIV (DHS)	70RSAT18CB0031001	2017	$413,761.00	$700,583.00	ECOHEALTH ALLIANCE	IGF::CI,CT::IGF RESEARCH AND DEVELOPMENT SERVICES FOR THE DEPARTMENT OF HOMELAND SECURITY, SCIENCE AND TECHNOLOGY DIRECTORATE, CHEMICAL AND BIOLOGICAL DEFENSE DIVISION FOR PURPOSES OF DEVELOPING A WEB-BASED APPLICATION AND EARLY WARNING SYSTEM FOR GLOBAL INFECTIOUS DISEASE BIO-EVENTS THAT THREATEN THE US VIA INTERNATIONAL TRANSPORTATION NETWORKS.
			2018	$246,770.00			
			2019	$40,052.00			
DOC	EASTERN ACQUISITION DIVISION KANSAS CITY Department of Commerce (DOC)	DOCWC133F06CN0251	2006	$256,120.00	$1,241,933.00	ECOHEALTH ALLIANCE	AERIAL SURVEYS OF RIGHT WHALES
			2007	$263,228.00			
			2008	$276,685.00			
			2009	$220,700.00			
			2010	$225,200.00			
USDA	Department of Agriculture (USDA)	08-7100-0206-CA	2008	$143,000.00	$143,000.00	ECOHEALTH ALLIANCE	CONDUCT AN AVIAN INFLUENZE SURVEILLANCE PROGRAM TO DETECT THE OCCURRENCE OF HIGHLY PATHOGENIC H5N1 AVIAN INFLUENZA IN MEXICO.
		09-7100-0206-CA	2009	$100,001.00	$100,001.00	ECOHEALTH ALLIANCE	CONDUCT AN AVIAN INFLUENZE SURVEILLANCE PROGRAM TO DETECT THE OCCURRENCE OF HIGHLY PATHOGENIC H5N1 AVIAN INFLUENZA IN MEXICO.
	Animal and Plant Inspection Service (USDA)	0771000237CA	2007	$403,700.00	$403,700.00	ECOHEALTH ALLIANCE	FINANCIAL ASSISTANCE TO PROVIDE THREE WORKSHOPS IN CENTRAL AND SOUTH AMERICA IN SUPPORT OF THE NATIONAL AVIAN INFLUENZA STRATEGIC PLAN
DOI	Department of the Interior (DOI)	F12AP01208	2012	$154,087.00	$154,087.00	ECOHEALTH ALLIANCE	ECO HEALTH ALLIANCE - GEOMYCES DESTRUCTANS, IMPLICATIONS FOR THE MIGRATION OF WHITE-NOSE SYNDROME BAT
	US Fish & Wildlife Services (DOI)	F12AP01117	2012	$44,499.00	$44,499.00	ECOHEALTH ALLIANCE	DEVELOPMENT OF A GREAT APE HEALTH UNIT IN SABAH, MALAYSIA
	US Fish & Wildlife Services (DOI)	F14AP00269	2014	$29,988.00	$29,988.00	ECOHEALTH ALLIANCE	ECOSYSTEM APPROACH FOR BIODIVERSITY MONITORING AND CONSERVATION
	OFFICE OF ACQUISITION AND GRANTS - RESTON (DOI)	INGD4ERSA0526	2004	$16,000.00	$61,000.00	ECOHEALTH ALLIANCE	04-2070-0909 MANATEE RESEAR
			2005	$15,000.00			
			2006	$10,000.00			
			2007	$10,000.00			
			2008	$10,000.00			
	Department of the Interior (DOI)	G05AC00002	2011	-$22,512.00	-$22,512.00	ECOHEALTH ALLIANCE	SEABIRD ECOLOGICAL ASSESSMENT NETWORK-SEANET

Totalling More than $61 Million

SUMMARY

FEDERAL GRANTS & CONTRACTS

AGENCY		TOTAL	
DoD***	Department of Defense	$38,949,941.00	2013-2020
HHS **	Health & Human Services	$13,023,168.00	2007-2020
NSF	National Science Foundation	$2,590,418.00	2006-2020
USAID	U.S. Agency for International Development	$2,499,147.00	2013-2016
DHS	Department of Homeland Security	$2,272,813.00	2016-2019
DoC	Department of Commerce	$1,241,933.00	2006-2010
USDA	U.S. Department of Agriculture	$646,701.00	2007-2009
DoI	Department of the Interior	$267,062.00	2004-2014
GRAND TOTAL			$61,491,183.00

** Includes NIH and CDC.
*** Also provided "Policy Advisor" David Franz. Former Commander for Fort Detrick - Principal U.S. Government Bioware/Biodefense Facility.

Inform

2001 - Baric Files Patent to Manipulate Genomes

US006593111B2

(12) **United States Patent**
Baric et al.

(10) **Patent No.: US 6,593,111 B2**
(45) **Date of Patent: Jul. 15, 2003**

(54) **DIRECTIONAL ASSEMBLY OF LARGE VIRAL GENOMES AND CHROMOSOMES**

(75) Inventors: **Ralph S. Baric**, Haw River, NC (US); **Boyd Yount**, Hillsborough, NC (US)

(73) Assignee: **University of North Carolina at Chapel Hill**, Chapel Hill, NC (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/862,847**

(22) Filed: **May 21, 2001**

(65) **Prior Publication Data**

US 2002/0177230 A1 Nov. 28, 2002

Related U.S. Application Data

(60) Provisional application No. 60/206,537, filed on May 21, 2000, and provisional application No. 60/285,320, filed on Apr. 20, 2001.

(51) **Int. Cl.**[7] **C12P 21/06**; C12N 7/00

(52) **U.S. Cl.** **435/69.1**; 435/235.1; 536/23.72

(58) **Field of Search** 435/69.1, 235.1; 536/23.72

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,202,430 A 4/1993 Brian et al. 536/23.72
5,916,570 A 6/1999 Kapil 424/222.1

Lai, Michael M.C. "The making of infectious viral RNA: No size limit in sight," *PNAS*. vol. 97, No. 10, May 9, 2000, pp. 5025-5027.

Almazan et al., "Engineering the largest RNA virus genome as an infectious bacterial artificial chromosome," *Proceedings of the National Academy of Sciences of USA* 97: 5516-5521 (2000).

Thiel et al., "Infectious RNA transcribed in vitro from a cDNA copy of the human coronavirus genome cloned in vaccinia virus," 82: 1273-1281 (2001).

Yount et al., "Strategy for systematic assembly of large RNA and DNA enomes: Transmissible gastroenteritis virus model," 74: 10600-10611 (2000).

International Search Report of PCT/US01/16564 dated Dec. 7, 2002.

Primary Examiner—Hankyel T. Park
(74) *Attorney, Agent, or Firm*—Myers Bigel Sibley & Sajovec, P.A.

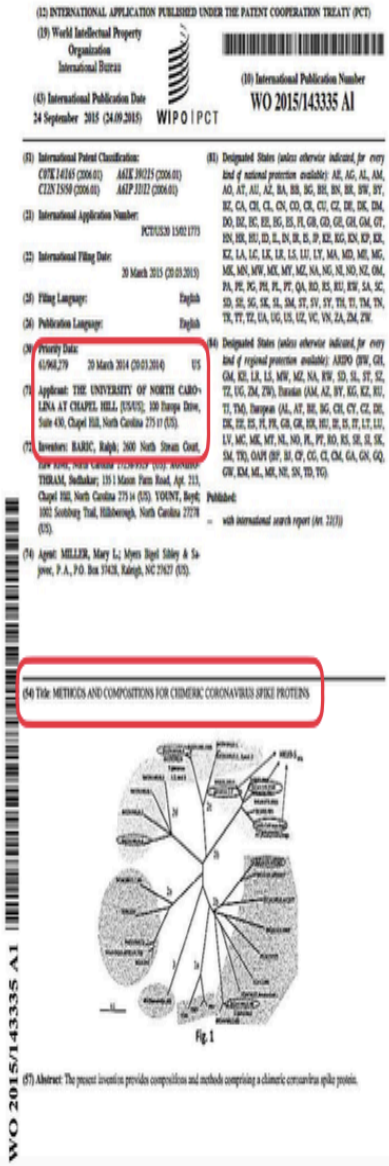
(57) **ABSTRACT**

Full-length, functionally intact genomes or chromosomes are directionally assembled with partial cDNA or DNA subclones of a genome. This approach facilitates the reconstruction of genomes and chromosomes in vitro for reintroduction into a living host, and allows the selected mutagenesis and genetic manipulation of sequences in vitro prior to reassembly into a full length genome molecule for reintroduction into the same or different host. This approach also provides an alternative to recombination-mediated techniques to manipulate the genomes of higher plants and animals as well as bacteria and viruses.

"TO WHOM IT MAY CONCERN"

Inform

2014 - Ralph Baric Receives International Patent to Alter Spike Protein of Corona Viruses



(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau

(10) International Publication Number
WO 2015/143335 A1

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24 September 2015 (24.09.2015)

WIPO | PCT

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C12N 15/50 (2006.01) *A61P 31/12* (2006.01)

(21) International Application Number:
PCT/US20 15/021773

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20 March 2015 (20.03.2015)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/968,279 20 March 2014 (20.03.2014) US

(71) Applicant: THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL [US/US]; 100 Europa Drive, Suite 430, Chapel Hill, North Carolina 275 17 (US).

(72) Inventors: BARIC, Ralph; 2600 North Stream Court, [illegible] THIRAM, Sudhakar; 135 1 Mason Farm Road, Apt. 213, Chapel Hill, North Carolina 275 14 (US). YOUNT, Boyd; 1002 Scotsbury Trail, Hillsborough, North Carolina 27278 (US).

(74) Agent: MILLER, Mary L.; Myers Bigel Sibley & Sajovec, P.A., P.O. Box 37428, Raleigh, NC 27627 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, ME, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:
– with international search report (Art. 21(3))

(54) Title: METHODS AND COMPOSITIONS FOR CHIMERIC CORONAVIRUS SPIKE PROTEINS

Fig. 1

(57) Abstract: The present invention provides compositions and methods comprising a chimeric coronavirus spike protein.

WO 2015/143335 A1

Making Chimeric (Gain-of-Function) Corona Virus Spike Proteins.

Funded by the NIH - Your Tax Dollars

WO 2015/143335 PCT/US2015/021773

METHODS AND COMPOSITIONS FOR CHIMERIC CORONAVIRUS SPIKE PROTEINS

STATEMENT OF PRIORITY

This application claims the benefit, under 35 U.S.C. § 119(e), of U.S. Provisional Application Serial No. 61/968,279, filed March 20, 2014, the disclosure of which is incorporated by reference herein in its entirety.

STATEMENT OF FEDERAL SUPPORT

This invention was made with government support under Grant No. U54AI057157 awarded by the National Institutes of Health. The government has certain rights in the invention.

"TO WHOM IT MAY CONCERN"

Inform

Evidence of HIV gp120 Inserts

In addition to Zhengli the Statistical Analysis of the Spike Protein

This is the French Virologist who received the **Nobel** in Physiology/Medicine for his discovery of **HIV**. He also a Research at the Paris Pasteur Institute and appointed as **University Chair** Professor in 2012 at the **Shanghai Jiao University**. This information has since been **removed** from the University website.

18 RNA fragments matching HIV & SIV (External Informative Elements; EIE).

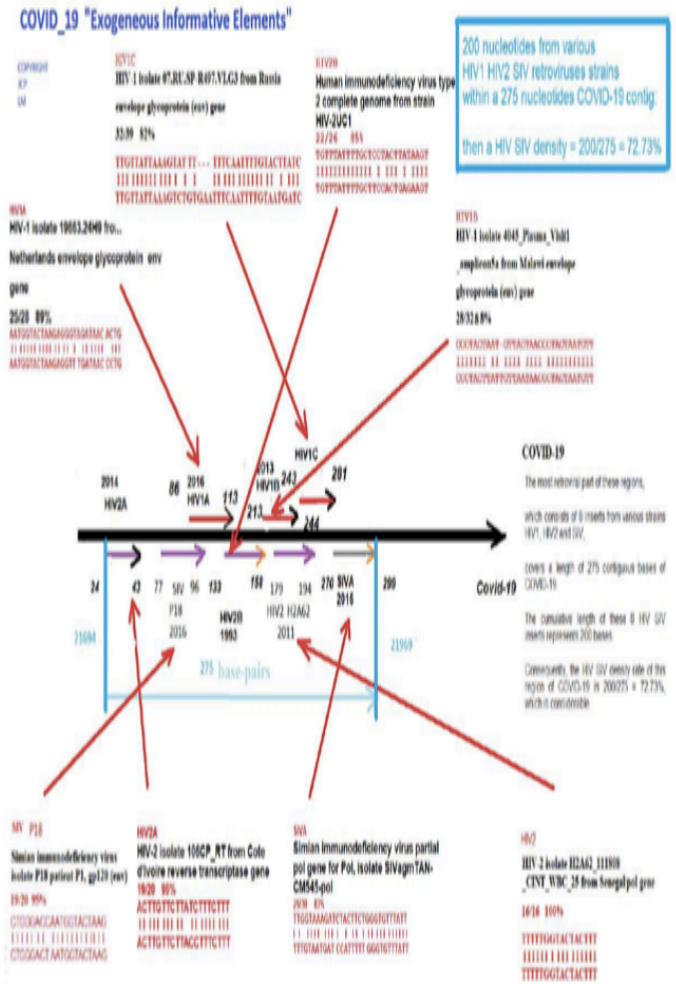
The SPIKE PROTEIN not only has the **PRRA** insert (4 amino acids; 12 nucleotide bases) but a 590 amino acid (1770 nucleotide bases) insert matching **HIV-1**.

Perez JC, Montagnier L. COVID-19, SARS AND BATS CORONAVIRUSES GENOMES PECULIAR HOMOLOGOUS RNA SEQUENCES. Intern J Research 2020;8(7):217-263.

Perez JC, Montagnier L. COVID-19, SARS and Bats Coronaviruses Genomes Unexpected Exogenous RNA Sequences.
https://www.researchgate.net/publication/341756383.

So, to summarize: a contiguous region representing 2.49% of the whole COVID-19 genome is 40.99% made up of 12 diverse « EIE » originating from various strains of HIV SIV retroviruses.

Figure 1 – This summary chart demonstrating visually how 200b from various HIV SIV retroviruses strains within a



concentrated 275b COVID-19 contig have a density rate equal to 72.73%.

Inform

The PRRA SPIKE Protein Insert Doesn't Exist in Any Other Corona Virus

What Do We Know About the SPIKE PROTEIN?

S2 is The Unstable Part of the Spike Protein - Where all the Variants are Occuring.

S1 on the other hand is where the PRRA (Furin Cleavage Site) Insert Is.

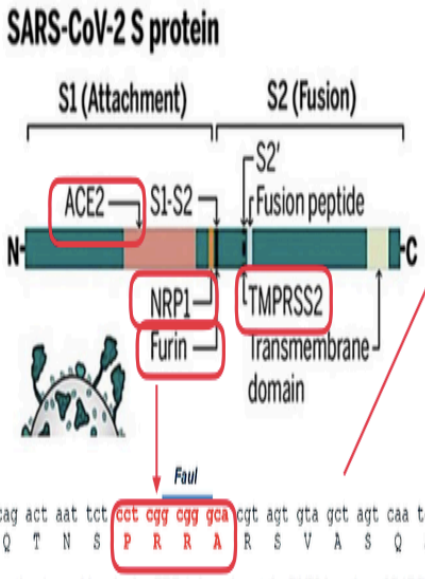


Figure 7. Two consecutive Arg residues in the -PRRA- insertion at the S1/S2 junction of SARS-CoV-2 Spike are both coded by a rare codon, CGG. A FauI restriction site, 5'-(N)$_6$GCGGG-3', is embedded in the coding sequence of the "inserted" PRRA segment, which may be used as a marker to monitor the preservation of the introduced furin-cleavage site.

Human SARS-CoV BJ01	655 - GICASYHTVSLL----RSTS - 670
Human SARS-CoV CUHK-W1	655 - GICASYHTVSLL----RSTS - 670
Human SARS-CoV Tor2	655 - GICASYHTVSLL----RSTS - 670
Human SARS-CoV Frankfurt-1	655 - GICASYHTVSLL----RSTS - 670
Human SARS-CoV Urbani	655 - GICASYHTVSLL----RSTS - 670
Civet SARS-CoV civet020	655 - GICASYHTVSSL----RSTS - 670
Civet SARS-CoV sz16	655 - GICASYHTVSSL----RSTS - 670
Racoon dog SARS-CoV A030	655 - GICASYHTVSSL----RSTS - 670
SARS-CoV-2	669 - GICASYQTQTNSPRRARSVA - 688
Pangolin CoV MP789	n/a - GICASYQTQTNS----RSVS - n/a
Bat SARSr-CoV RaTG13	669 - GICASYQTQTNS----RSVA - 684
Bat SARSr-CoV LYRa11	659 - GICASYHTASLL----RHTG - 674
Bat SARSr-CoV LYRa3	659 - GICASYHTASLL----RHTG - 674
Bat SARSr-CoV RaSHC014	656 - GICASYHTVSSL----RSTS - 671
Bat SARSr-CoV Ra4084	656 - GICASYHTVSSL----RSTS - 671
Bat SARSr-CoV WIV1	656 - GICASYHTVSSL----RSTS - 671
Bat SARSr-CoV Ra3367	656 - GICASYHTVSSL----RSTS - 671
Bat SARSr-CoV Ra7327	656 - GICASYHTVSSL----RSTS - 671
Bat SARSr-CoV Ra9401	656 - GICASYHTVSSL----RSTS - 671
Bat SARSr-CoV Ra4231	655 - GICASYHTVSSL----RSTS - 670
Bat SARSr-CoV WIV16	655 - GICASYHTVSSL----RSTS - 670
Bat SARSr-CoV Ra4074	655 - GICASYHTVSSL----RSTS - 670
Bat SARSr-CoV ZC45	646 - GICASYHTASIL----RSTS - 661
Bat SARSr-CoV ZXC21	645 - GICASYHTASIL----RSTG - 660
Bat SARSr-CoV Rf4092	634 - GICASYHTASTL----RGVG - 649
Bat SARSr-CoV Rf/JL2012	636 - GICASYHTASLL----RSTG - 651
Bat SARSr-CoV JTMC15	636 - GICASYHTASLL----RSTG - 651
Bat SARSr-CoV 16BO133	636 - GICASYHTASLL----RSTG - 651
Bat SARSr-CoV BJ15-21	636 - GICASYHTASLL----RSTG - 651
Bat SARSr-CoV YN2013	633 - GICASYHTASTL----RSIG - 648
Bat SARSr-CoV Anlong-103	633 - GICASYHTASTL----RSVG - 648
Bat SARSr-CoV Rp/Shaanxi2011	640 - GICASYHTASVL----RSTG - 655
Bat SARSr-CoV Rm/Hub2013	641 - GICASYHTASVL----RSTG - 656
Bat SARSr-CoV YNLF/34C	641 - GICASYHTASVL----RSTG - 656
Bat SARSr-CoV YNLF/31C	641 - GICASYHTASVL----RSTG - 656
Bat SARSr-CoV Rf1	641 - GICASYHTASHL----RSTG - 656
Bat SARSr-CoV 273	641 - GICASYHTASHL----RSTG - 656
Bat SARSr-CoV Rf/6X2013	639 - GICASYHTASLL----RSTG - 654
Bat SARSr-CoV Rf/HeB2013	641 - GICASYHTASLL----RSTG - 656
Bat SARSr-CoV Cp/Yunnan2011	641 - GICASYHTASLL----RHTG - 656
Bat SARSr-CoV Ra672	641 - GICASYHTASTL----RSVG - 656
Bat SARSr-CoV Ra4255	641 - GICASYHTASTL----RSVG - 656
Bat SARSr-CoV 4081	641 - GICASYHTASTL----RSVG - 656
Bat SARSr-CoV Rm1	641 - GICASYHTASVL----RSTG - 656
Bat SARSr-CoV 279	641 - GICASYHTASVL----RSTG - 656
Bat SARSr-CoV Rm/GX2013	642 - GICASYHTASVL----RSTG - 657
Bat SARSr-CoV Ra806	641 - GICASYHTASLL----RSTG - 656
Bat SARSr-CoV HKU3-1	642 - GICASYHTASVL----RSTG - 657
Bat SARSr-CoV Longquan-140	642 - GICASYHTASVL----RSTG - 657
Bat SARSr-CoV Rp3	641 - GICASYHTASTL----RSVG - 656
Bat SARSr-CoV Ra4247	642 - GICASYHTASTL----RSVG - 657
Bat SARSr-CoV Ra4237	641 - GICASYHTASTL----RSVG - 656
Bat SARSr-CoV As6526	641 - GICASYHTASTL----RSVG - 656

*** Yan LM, Kang S, Guan J, Hu S. Unusual Features of the SARS-CoV-2 Genome Suggesting Sophisticated Laboratory Modification Rather Than Natural Evolution and Delineation of Its Probable Synthetic Route. Rule of Law Society & Rule of Law Foundation, New York, NY, USA. 2021

"TO WHOM IT MAY CONCERN"

Inform

The PRRA (Furin Cleavage Site) Insert is ESSENTIAL for SARS-CoV-2 to Infect People.

Molecular Cell

CellPress

Short Article

A Multibasic Cleavage Site in the Spike Protein of SARS-CoV-2 Is Essential for Infection of Human Lung Cells

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https://doi.org/10.1016/j.molcel.2020.04.022

SUMMARY

The pandemic coronavirus SARS-CoV-2 threatens public health worldwide. The viral spike protein mediates SARS-CoV-2 entry into host cells and harbors a S1/S2 cleavage site containing multiple arginine residues (multibasic) not found in closely related animal coronaviruses. However, the role of this multibasic cleavage site in SARS-CoV-2 infection is unknown. Here, we report that the cellular protease furin cleaves the spike protein at the S1/S2 site and that cleavage is essential for S-protein-mediated cell-cell fusion and entry into human lung cells. Moreover, optimizing the S1/S2 site increased cell-cell, but not virus-cell, fusion, suggesting that the corresponding viral variants might exhibit increased cell-cell spread and potentially altered virulence. Our results suggest that acquisition of a S1/S2 multibasic cleavage site was essential for SARS-CoV-2 infection of humans and identify furin as a potential target for therapeutic intervention.

INTRODUCTION

It is believed that the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2, previously termed nCoV-2019) was introduced into the human population from a poorly characterized animal reservoir in late 2019 (Ge et al., 2013; Wang et al., 2020; Zhou et al., 2020b; Zhu et al., 2020). The epicenter of the subsequent SARS-CoV-2 spread was Wuhan, Hubei province, China, with more than 65,000 cases occurring in this area (WHO, 2020a). However, infections have now been detected in more than 110 countries and massive outbreaks are currently ongoing in the United States, Italy, and Spain (WHO, 2020a, 2020b). Understanding which features of SARS-CoV-2 are essential for infection of human cells should provide insights into viral transmissibility and pathogenesis and might reveal targets for intervention.

The spike protein of coronaviruses is incorporated into the viral envelope and facilitates viral entry into target cells. For this, the surface unit S1 binds to a cellular receptor while the transmembrane unit S2 facilitates fusion of the viral membrane with a cellular membrane (Hoffmann et al., 2018; Hulswit et al., 2016; Millet and Whittaker, 2018). Membrane fusion depends on S protein cleavage by host cell proteases at the S1/S2 and the S2′ site (Figure 1A), which results in S protein activation (Hoffmann et al., 2018; Hulswit et al., 2016; Millet and Whittaker, 2018). Cleavage of the S protein can occur in the constitutive secretory pathway of infected cells or during viral entry into target cells and is essential for viral infectivity. Therefore, the responsible enzymes constitute potential targets for antiviral intervention.

Our previous work revealed that the activity of the cellular serine protease TMPRSS2, which activates several coronaviruses (Bertram et al., 2013; Gierer et al., 2013; Glowacka et al., 2011; Matsuyama et al., 2010; Shirato et al., 2013, 2016; Shulla et al., 2011), is also required for robust SARS-CoV-2 infection of human lung cells (Hoffmann et al., 2020). However, it is conceivable that the activity of other cellular proteases is also necessary. Thus, the Middle East respiratory syndrome coronavirus spike protein (MERS-S) is activated by a two-step process: MERS-S is first cleaved by furin at the S1/S2 site in infected cells, which is required for subsequent TMPRSS2-mediated cleavage at the S2′ site (Figure 1A) during viral entry into lung cells (Kleine-Weber et al., 2018; Park et al., 2016; Millet and Whittaker, 2014). A cathepsin B/L-dependent auxiliary activation pathway is operative in many TMPRSS2^{-} cell lines but seems not to be available in viral target cells in the lung because TMPRSS2-dependent activation of the S protein is essential for robust MERS-CoV and SARS-CoV spread and pathogenesis in the infected host (Iwata-Yoshikawa et al., 2019; Simmons et al., 2005; Zhou et al., 2015).

The S1/S2 site in SARS-CoV-2 forms an exposed loop (Figure 1B) that harbors multiple arginine residues (multibasic) (Walls et al., 2020; Wrapp et al., 2020) that are not found in SARS-CoV-related coronaviruses (SARSr-CoV) but are present in the human coronaviruses OC43, HKU1, and MERS-CoV

Inform

2007 U.S. Government Has Patent Rights to Insertion of Furin Protease Cleavage Sites

US007223390B2

(12) **United States Patent**
Brown

(10) **Patent No.: US 7,223,390 B2**
(45) **Date of Patent: May 29, 2007**

(54) **INSERTION OF FURIN PROTEASE CLEAVAGE SITES IN MEMBRANE PROTEINS AND USES THEREOF**

(75) Inventor: **Dennis T. Brown**, Raleigh, NC (US)

(73) Assignee: **Research Development Foundation**, Carson City, NV (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **10/841,707**

(22) Filed: **May 7, 2004**

(65) **Prior Publication Data**

US 2004/0224391 A1 Nov. 11, 2004

Related U.S. Application Data

(60) Provisional application No. 60/469,126, filed on May 9, 2003.

(51) **Int. Cl.**
A01N 63/00 (2006.01)

(52) **U.S. Cl.** **424/93.2**; 435/6; 435/463; 435/219; 424/93.6

(58) **Field of Classification Search** 424/185.1, 424/204.1, 218.1; 536/23.1
See application file for complete search history.

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(Continued)

Primary Examiner—Brenda Brumback
Assistant Examiner—Shanta Hutt
(74) *Attorney, Agent, or Firm*—Fulbright & Jaworski LLP

(57) **ABSTRACT**

Cleavage site for the protease furin is inserted between domains of a membrane glycoprotein. Upon cleavage by furin in the trans-Golgi network, the protein is separated into individual membrane-free domains that retains its native conformation. This protocol can be used to produce virus membrane protein domains for structural analysis and for trials as vaccines.

13 Claims, 3 Drawing Sheets

Here is the U.S. Patent for Inserting Furin (PRRA) Protease Cleavage Sites. Certain Rights may be Owned by U.S. Government - NIH Grant.

1

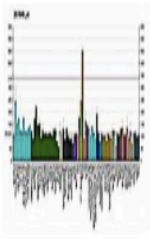
INSERTION OF FURIN PROTEASE CLEAVAGE SITES IN MEMBRANE PROTEINS AND USES THEREOF

CROSS-REFERENCE TO RELATED APPLICATION

This non-provisional patent application claims benefit of provisional patent application U.S. Ser. No. 60/469,126, filed May 9, 2003, now abandoned.

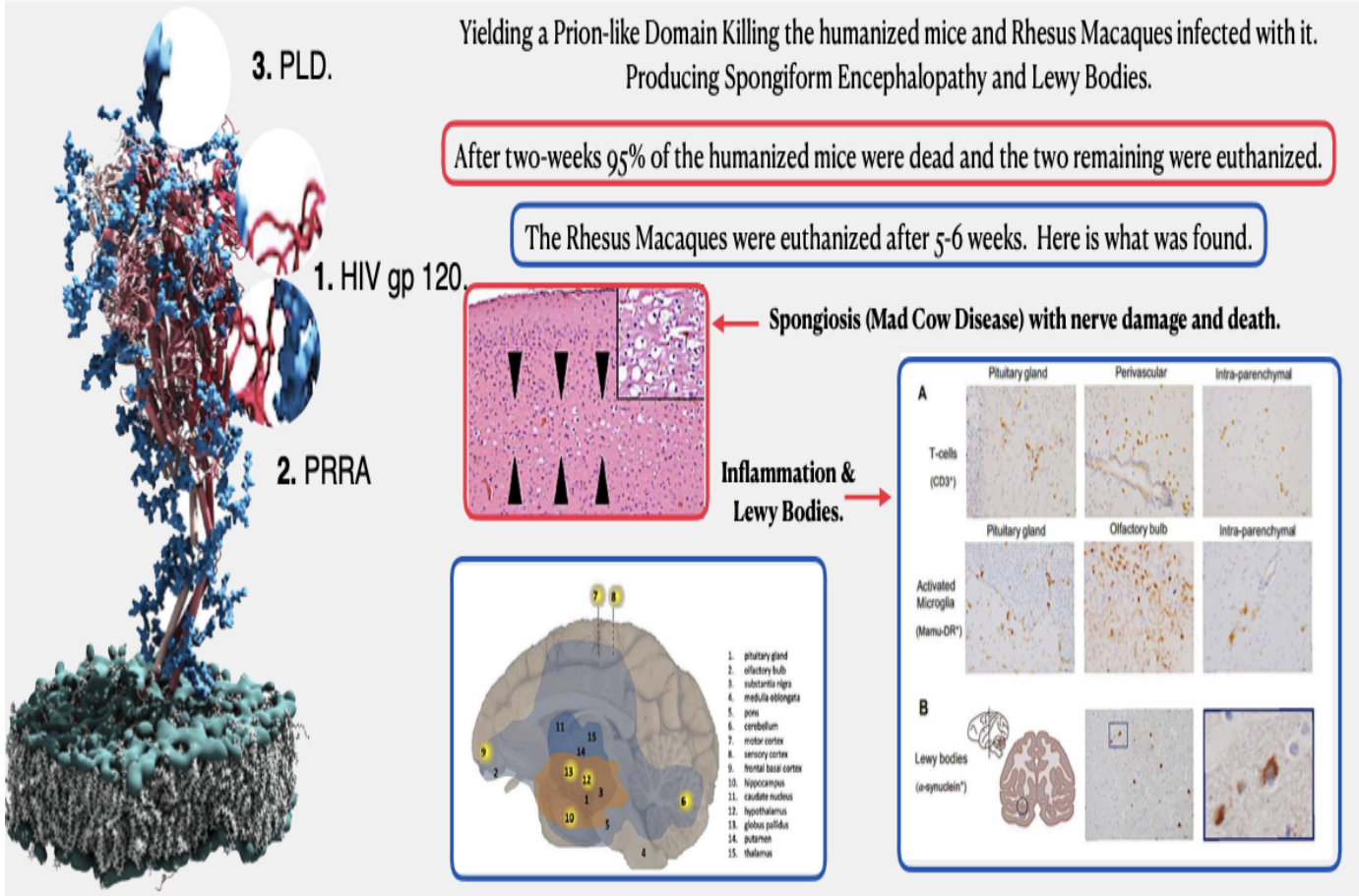
The United States government may own certain rights to this invention pursuant to grant number AI 42775 from the National Institutes of Health.

Furin is one of the proteases responsible for the proteolytic cleavage of HIV envelope polyprotein precursor gp160 to gp120 and gp41 prior to viral assembly. This gene is thought to play a role in tumor progression. The use of alternate polyadenylation sites has been found for this gene.



Furin - Wikipedia
en.wikipedia.org/wiki/Furin

Insertions 1 & 2 Produces Prion-Like Domain



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"TO WHOM IT MAY CONCERN"

Inform

What are the Symptoms of SARS-CoV-2 vs COVID-19?

The Virus

Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2)

What you should look for when you are infected.

Symptoms may appear 2-14 days after exposure to the virus. People with these symptoms may have COVID-19:

- Fever or chills
- Cough
- Shortness of breath or difficulty breathing
- Fatigue
- Muscle or body aches
- Headache
- New loss of taste or smell
- Sore throat
- Congestion or runny nose
- Nausea or vomiting
- Diarrhea

How do you know when the infection becomes disease - COVID-19.

Look for emergency warning signs for COVID-19. If someone is showing any of these signs, seek emergency medical care immediately:

Trouble breathing
Persistent pain or pressure in the chest
New confusion
Inability to wake or stay awake
Pale, gray, or blue-colored skin, lips, or nail beds, depending on skin tone

Inform

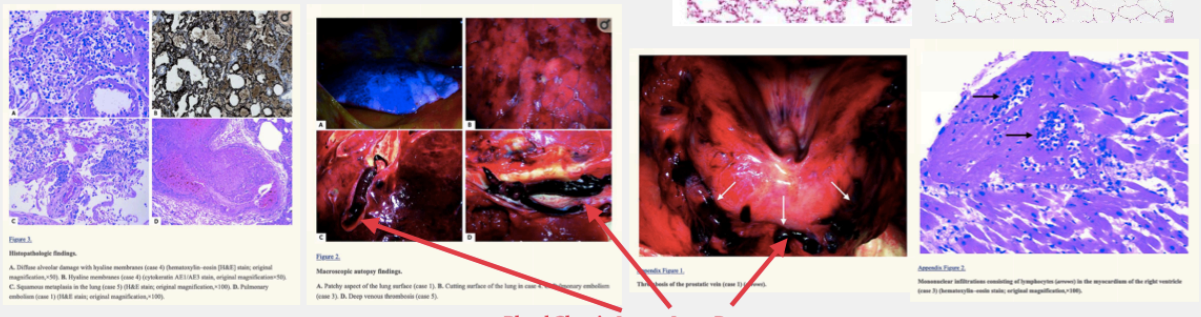
What is the Difference Between SARS-CoV-2 & COVID-19?

The InflammoThrombotic Response (ITR).

The Disease

Co(rona) Vi(rus) D(isease) - 2019

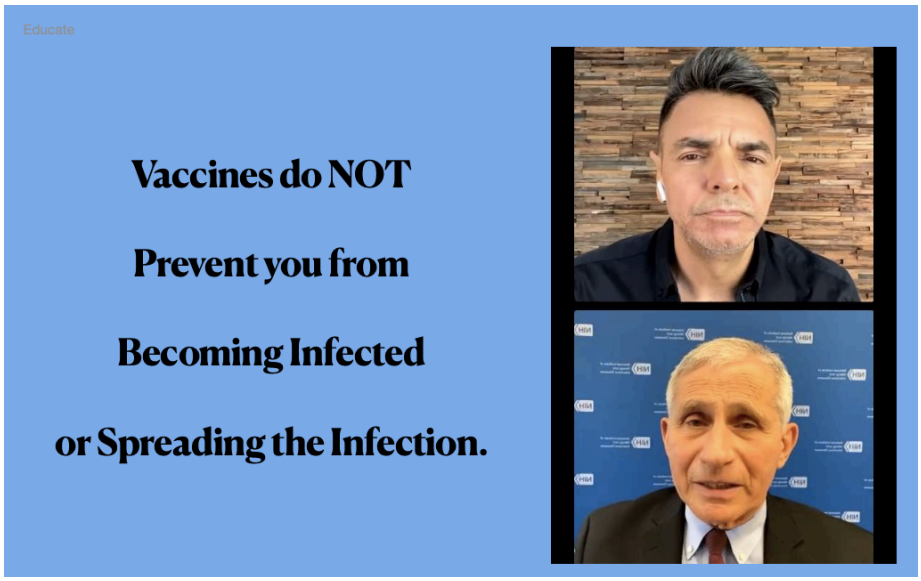
InflammoThrombotic Disease in people who have other InflammoThrombotic Diseases (The Comorbidites) resulting in more InflammoThrombotic Disease. When not treated people died.

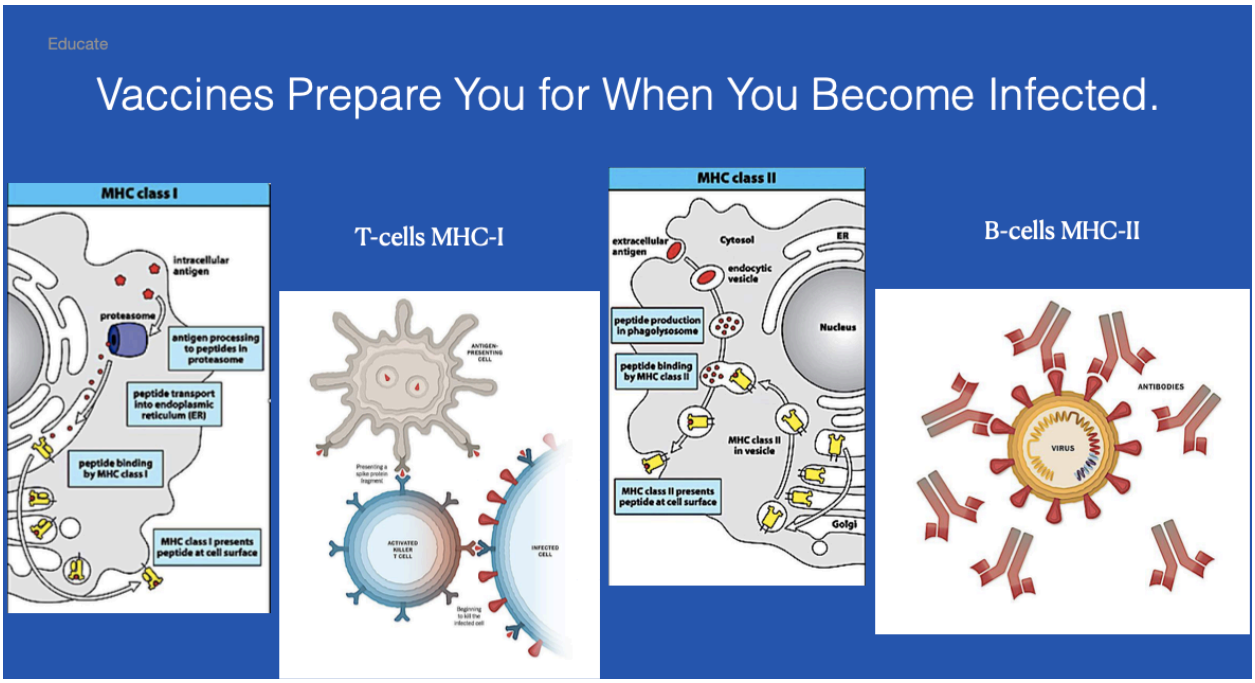


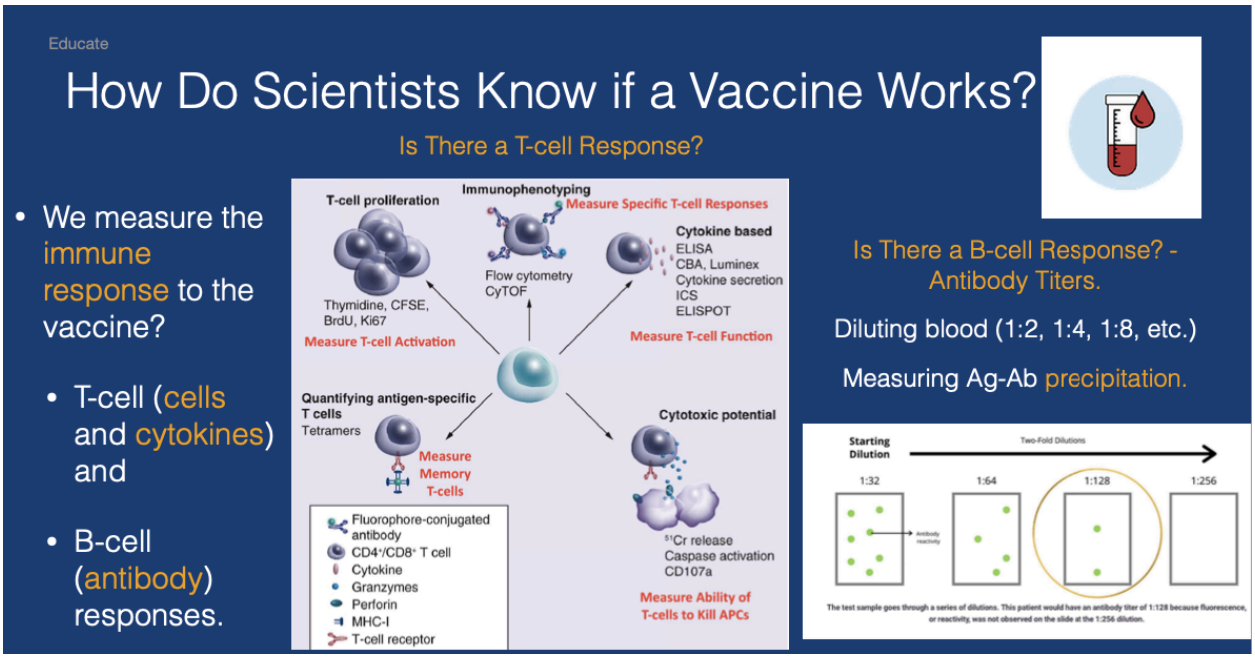
Blood Clots in Lungs, Legs, Prostate

Wichmann D, Sperhake J-P, Lütgehetmann M, et al. Autopsy Findings and Venous Thromboembolism in Patients With COVID-19. A Prospective Cohort Study. Annals of Internal Medicine 2020. 6 May 2020. DOI: 10.7326/M20-2003.

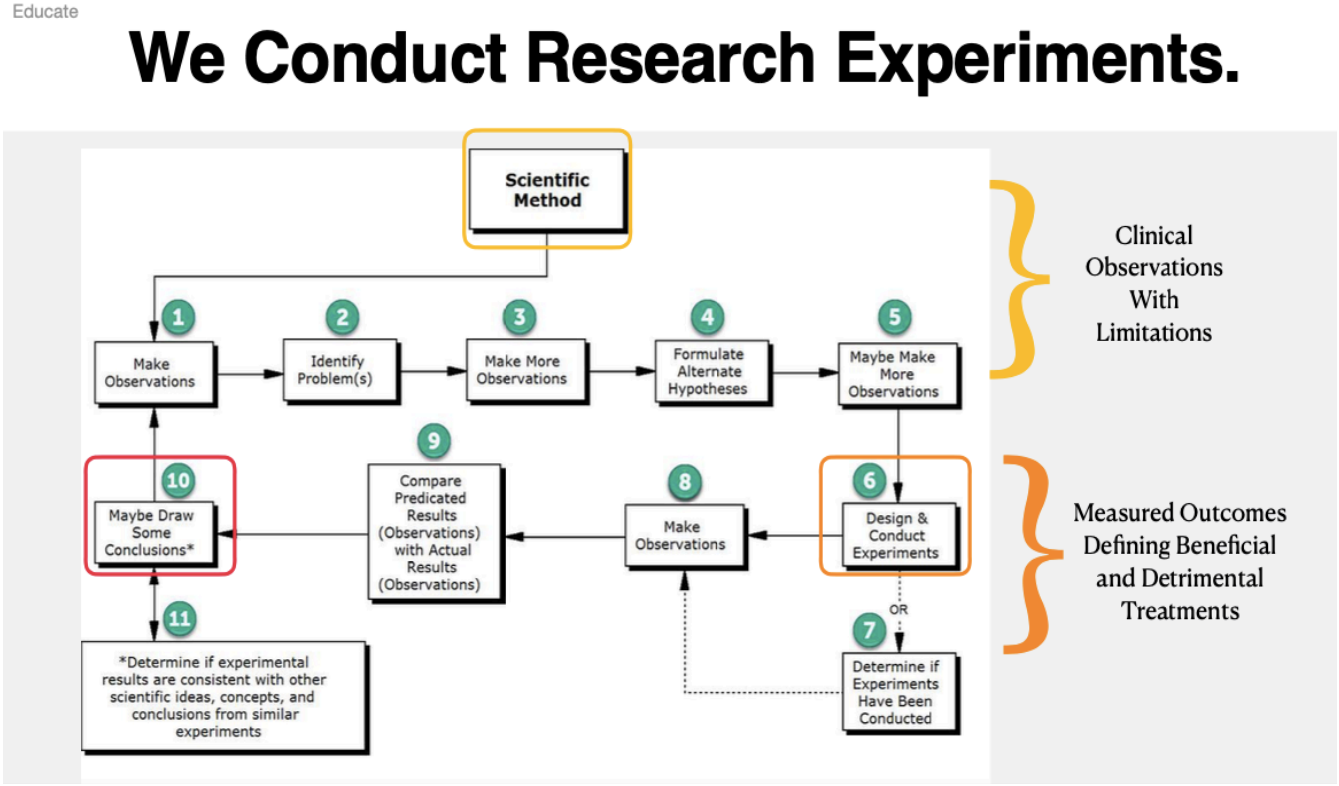
"TO WHOM IT MAY CONCERN"







So how do scientists actually know if a drug or biological (vaccine) agent works?



Educate

Before We Ever Begin Testing People

We Begin with **Pre-Clinical** Testing.

1) When possible **computer** modeling and work on isolated **cell cultures** and **tissue**.
   At some point you need to know what happens to a **living creature**.

2) **Animal** testing has been an obligatory step **before testing on humans**.
   1) EU Directive 2001/83/EC
   2) FDA Product Development under the Animal Rule
   3) World Medical Association's "Ethical Principles for Medical Research Involving Human Subjects".
   4) 1947 Nuremburg Code
   5) International Covenant on Civil and Political Rights
   6) The American Medical Association Code of Medical Ethics

Educate

Phases of Clinical Trials.

Phase III - How does the drug **compare** with that **already used** for the problem?
This phase of research occurs **when** there is **compelling evidence of efficacy & safety**.
Testing for:
Demonstrate the drug is **Effective & Safe in a larger number of patients** in the target group - the people the drug is intended to treat.
Monitor side effects & risks.
Test different doses and different ways of giving the drug.
Can the drug be used at different stages of the disease being treated - early, late ....
Provide **sufficient information** about the drug for marketing approval -> **FDA**.

Phase IV - Post Marketing Surveillance Studies (aka **Pharmacovigilance**).
Testing for:
The **long-term effect** of the drug or treatment.
Study **other** impact or **use** of the drug.

Educate

Phases of Clinical Trials.

Testing of a drug or medical procedure **takes time** to ensure Efficacy & Safety.

1) There are **3 fundamental principles** followed to protect the well-being of the research **animals**.
   1) **Reduce** the number of animals to a minimum
   2) **Reduce** or minimize the harm and injury to the animal
   3) **Replace** animal experiments with non-animal studies wherever possible.

2) Once you **know enough** from the animal studies to determine RISKS & BENEFITS, **THEN** human research trials are considered.

https://rumble.com/veoy2x-emily-and-jackie-our-most-important-message-yet.html

Educate

Phases of Clinical Trials

Clinical Trials on **Humans** to ensure **Safety** & **Efficacy**.

Phase I - Determine **Safety**. If you can't find a **safe dose**, then it doesn't matter if it works.
Small in **numbers** & **healthy** people.
Testing for:
Safety of Drug & Toxicity
Side Effects - Harm, Injury
Safe **Dosage** Range - Limits
How is the drug absorbed, metabolized, distributed and eliminated from the body.
(I.e. Pharmacokinetics; Pharmacodynamics)

Phase II (aka **Exploratory** Trials) - **If** a **Safe** Dose is Found - **Does the Drug Work?**
Larger **numbers** of people with the **disease**.
Does the drug work **for people you are intending to treat**.
Testing for:
Phase **IIA** - **How much** (dose) of the **drug** should people receive? What **dose** is safe?
Phase **IIB** - **How well** dose the drug work & for **what disease**(s)?

Recapping Human Clinical Research Trials

(This is The Slide My Students Wish I Made for Them)

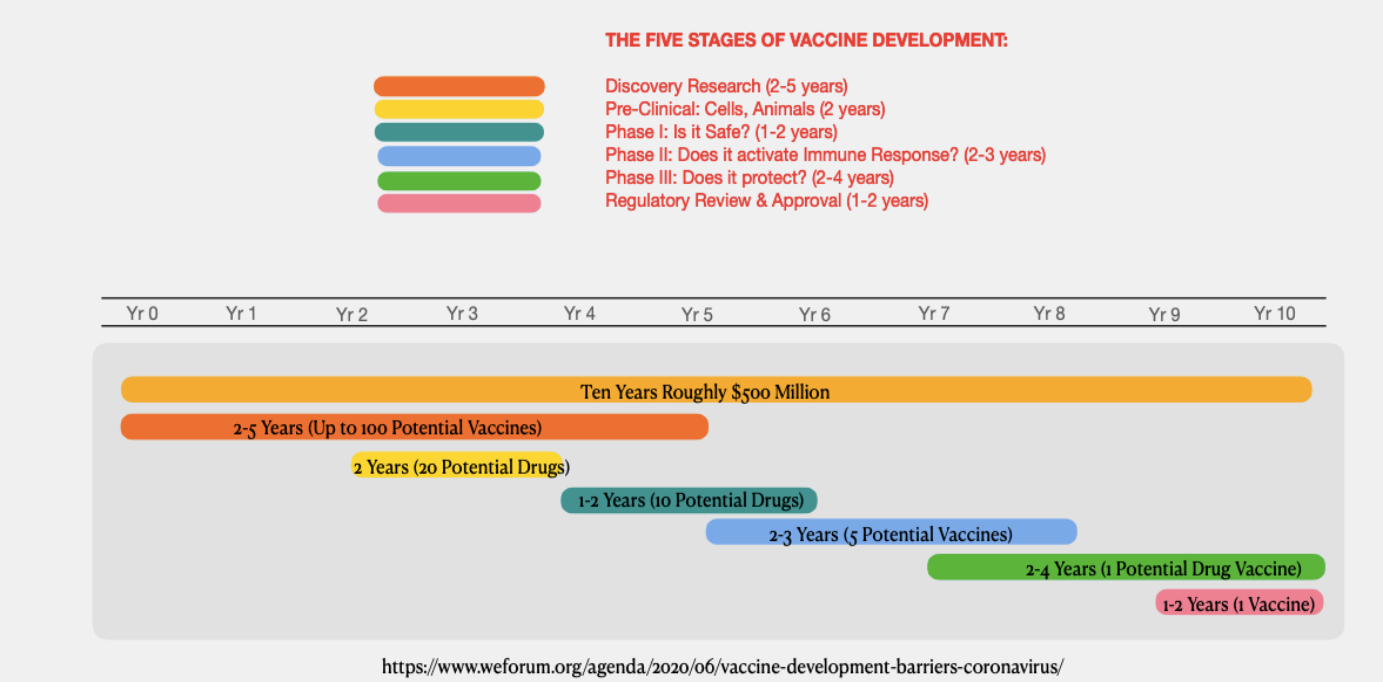
Tissue, Computer & Animal Studies - Is it Safe Enough to Test in People?

Phase I - Is it Safe?

Phase 2 - Is it Effective?

Phase 3 - Is it Better?

So How Long Does This Usually Take for Vaccines?



https://www.weforum.org/agenda/2020/06/vaccine-development-barriers-coronavirus/

EUA Bypass The Scientific Method

Contains Nonbinding Recommendations

Emergency Use Authorization for Vaccines to Prevent COVID-19

Guidance for Industry

October 2020

Contains Nonbinding Recommendations

Emergency Use Authorization for Vaccines to Prevent COVID-19

Guidance for Industry

This guidance represents the current thinking of the Food and Drug Administration (FDA or Agency) on this topic. It does not establish any rights for any person and is not binding on FDA or the public. You can use an alternative approach if it satisfies the requirements of the applicable statutes and regulations. To discuss an alternative approach, contact the FDA staff responsible for this guidance as listed on the title page.

In general, FDA's guidance documents, including this guidance, do not establish legally enforceable responsibilities. Instead, guidances describe the Agency's current thinking on a topic and should be

1

Contains Nonbinding Recommendations

viewed only as recommendations, unless specific regulatory or statutory requirements are cited. The use of the word *should* in Agency guidance means that something is suggested or recommended, but not required.

MISREPRESENTATION

III. CRITERIA AND CONSIDERATIONS FOR THE ISSUANCE OF AN EUA FOR A COVID-19 VACCINE

On February 4, 2020, pursuant to section 564(b)(1)(C) of the FD&C Act (21 U.S.C. 360bbb-3(b)(1)(C)), the Secretary of HHS determined that there is a public health emergency that has a significant potential to affect national security or the health and security of United States citizens living abroad, and that involves the virus that causes COVID-19. On the basis of such determination, on March 27, 2020, the Secretary then declared that circumstances exist justifying the authorization of emergency use of drugs and biological products during the COVID-19 pandemic, pursuant to section 564(b)(1) of the FD&C Act (21 U.S.C. 360bbb-3(b)(1)).[3]

Based on this declaration and determination, FDA may issue an EUA after FDA has determined that the following statutory requirements are met (section 564 of the FD&C Act (21 U.S.C. 360bbb-3)) (Ref. 3):

- The chemical, biological, radiological, or nuclear (CBRN) agent referred to in the March 27, 2020 EUA declaration by the Secretary of HHS (SARS-CoV-2) can cause a serious or life-threatening disease or condition.
- Based on the totality of scientific evidence available, including data from adequate and well-controlled trials, if available, it is reasonable to believe that the product may be effective to prevent, diagnose, or treat such serious or life-threatening disease or condition that can be caused by SARS-CoV-2.
- The known and potential benefits of the product, when used to diagnose, prevent, or treat the identified serious or life-threatening disease or condition, outweigh the known and potential risks of the product.
- There is no adequate, approved, and available alternative to the product for diagnosing, preventing, or treating the disease or condition.

In the case of investigational vaccines being developed for the prevention of COVID-19, any assessment regarding an EUA will be made on a case by case basis considering the target population, the characteristics of the product, the preclinical and human clinical study data on the product, and the totality of the available scientific evidence relevant to the product.

So By Definition The EUA No Longer Exists and the Use of PCR and These Experimental Drug Vaccines Are Therefore No Longer Valid.

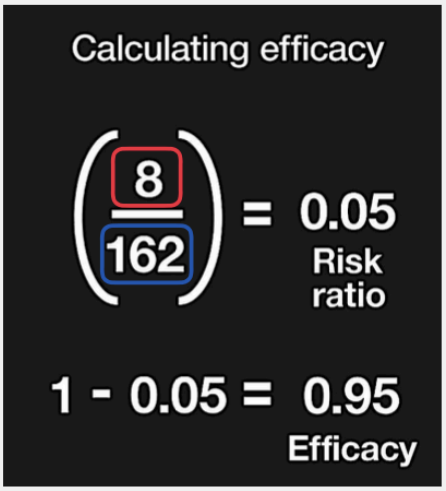
Do The Vaccines Reduce Your Risk of COVID

Relative Risk Reduction (RRR/RR)	**Absolute Risk Reduction (ARR)**	**Number Needed to Vaccinate** (NNV) = **1 ÷ ARR**
The **relative** decrease in being diagnosed with COVID between those vaccinated and those not.	The **actual** difference between those two groups - vaccinated vs non-vaccinated.	The number of people you need to vaccinate to prevent 1-person from being diagnosed with COVID.

What Does Vaccine Efficacy (RRR) Really Mean?

Vaccine Efficacy is 1 minus the Risk Ratio (x 100 for %).

Risk Ratio: The number of people diagnosed with COVID after receiving the Vaccine ÷ The number of people diagnosed with COVID who weren't vaccinated.



"TO WHOM IT MAY CONCERN"

Educate

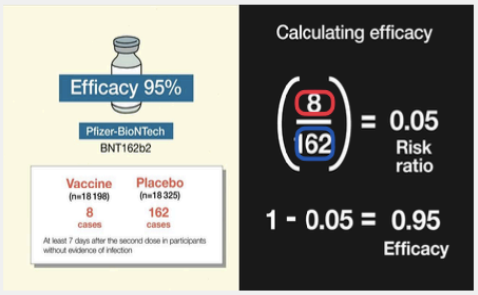
Let's Look at Pfizer Vaccine Efficacy.

The calculated Vaccine Efficacy was 95%. Page 24 of EUA.

Table 6. Final Analysis of Efficacy of BNT162b2 Against Confirmed COVID-19 From 7 Days After Dose 2 in Participants Without Evidence of Prior SARS-CoV-2 Infection - Evaluable Efficacy Population

Pre-specified Age Group	BNT162b2 N[a] = 18198 Cases n1[b] Surveillance Time[c] (n2[d])	Placebo N[a] =18325 Cases n1[b] Surveillance Time[c] (n2[d])	Vaccine Efficacy % (95% CI)	Met Predefined Success Criterion*
All participants	8 2.214 (17411)	162 2.222 (17511)	95.0 (90.3, 97.6)[e]	Yes
16 to 55 years	5 1.234 (9897)	114 1.239 (9955)	95.6 (89.4, 98.6)[f]	NA
> 55 years and older	3 0.980 (7500)	48 0.983 (7543)	93.7 (80.6, 98.8)[f]	NA

*Success criterion: the posterior probability that true vaccine efficacy > 30% conditioning on the available data is >99.5% at the final analysis
[a] N = number of participants in the specified group.
[b] n1 = Number of participants meeting the endpoint definition.
[c] Total surveillance time in 1000 person-years for the given endpoint across all participants within each group at risk for the endpoint. Time period for COVID-19 case accrual is from 7 days after Dose 2 to the end of the surveillance period.
[d] n2 = Number of participants at risk for the endpoint.
[e] Credible interval for VE was calculated using a beta-binomial model with prior beta (0.700102, 1) adjusted for surveillance time.
[f] Confidence interval (CI) for VE is derived based on the Clopper and Pearson method adjusted to the surveillance time.



Educate

But the Goal is to Prevent COVID

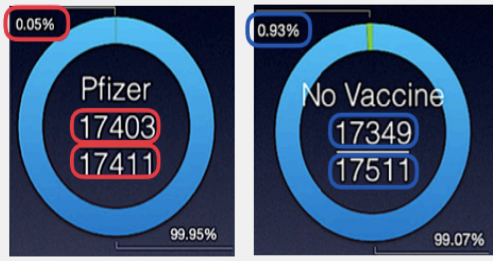
Did The Pfizer Vaccine Do Better at Preventing COVID Than Having No Vaccine?

7 Days after 2nd Injection there were fewer cases of COVID but The Difference in the number of cases wasn't statistically significant. *p=NS*

Table 6. Final Analysis of Efficacy of BNT162b2 Against Confirmed COVID-19 From 7 Days After Dose 2 in Participants Without Evidence of Prior SARS-CoV-2 Infection - Evaluable Efficacy Population

Pre-specified Age Group	BNT162b2 N[a] = 18198 Cases n1[b] Surveillance Time[c] (n2[d])	Placebo N[a] =18325 Cases n1[b] Surveillance Time[c] (n2[d])	Vaccine Efficacy % (95% CI)	Met Predefined Success Criterion*
All participants	8 2.214 (17411)	162 2.222 (17511)	95.0 (90.3, 97.6)[e]	Yes
16 to 55 years	5 1.234 (9897)	114 1.239 (9955)	95.6 (89.4, 98.6)[f]	NA
> 55 years and older	3 0.980 (7500)	48 0.983 (7543)	93.7 (80.6, 98.8)[f]	NA

*Success criterion: the posterior probability that true vaccine efficacy > 30% conditioning on the available data is >99.5% at the final analysis
[a] N = number of participants in the specified group.
[b] n1 = Number of participants meeting the endpoint definition.
[c] Total surveillance time in 1000 person-years for the given endpoint across all participants within each group at risk for the endpoint. Time period for COVID-19 case accrual is from 7 days after Dose 2 to the end of the surveillance period.
[d] n2 = Number of participants at risk for the endpoint.
[e] Credible interval for VE was calculated using a beta-binomial model with prior beta (0.700102, 1) adjusted for surveillance time.
[f] Confidence interval (CI) for VE is derived based on the Clopper and Pearson method adjusted to the surveillance time.



	Observed	Expected	Marginal Row Totals
Pfizer	17403 (17326.25) [0.34]	17249 (17325.75) [0.34]	34652
Nothing	17349 (17425.75) [0.34]	17502 (17425.25) [0.34]	34851
Marginal Column Totals	34752	34751	69503 (Grand Total)

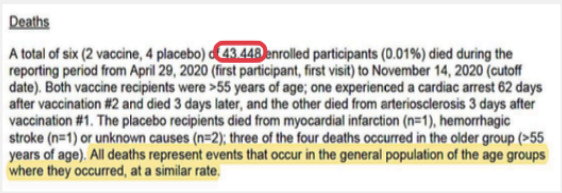
The chi-square statistic is 1.3561. The *p*-value is .244218. *Not* significant at $p < .05$.

The chi-square statistic with Yates correction is 1.3385. The *p*-value is .247304. *Not* significant at $p < .05$.

Absolute Risk Reduction (ARR) = 0.93% minus 0.05% = 0.88%

Did the Pfizer Vaccine Reduce COVID Deaths?

Going to the Pfizer EUA Documents (page 41) Where We Find this Information.



Deaths

A total of six (2 vaccine, 4 placebo) of 43,448 enrolled participants (0.01%) died during the reporting period from April 29, 2020 (first participant, first visit) to November 14, 2020 (cutoff date). Both vaccine recipients were >55 years of age; one experienced a cardiac arrest 62 days after vaccination #2 and died 3 days later, and the other died from arteriosclerosis 3 days after vaccination #1. The placebo recipients died from myocardial infarction (n=1), hemorrhagic stroke (n=1) or unknown causes (n=2); three of the four deaths occurred in the older group (>55 years of age). All deaths represent events that occur in the general population of the age groups where they occurred, at a similar rate.

Issue	Pfizer	No Vaccine
Death	2 of 21621 (0.0%)	4 of 21631 (0.0%)
MI		1
Cardiac arrest	1	
ASCAD	1	
Hemorrhagic CVS		1
Unknown		2

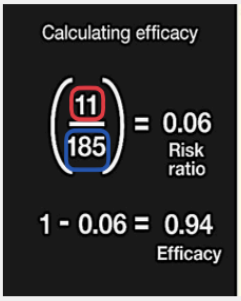
There is no statistically significant difference in the numbers of deaths and they represent what is seen in the general population.

Let's Look at Moderna Vaccine Efficacy.

The calculated Vaccine Efficacy was 94%. Page 29 of EUA.

Table 17. Final Scheduled Efficacy Analysis, Primary Endpoint COVID-19 Starting 14 Days After the Second Dose per Adjudication Committee Assessments, Per-Protocol Set

Primary Endpoint: COVID-19 (per adjudication committee assessment)	Vaccine Group N=13934 Cases n (%) (Incidence Rate per 1,000 person-years)*	Placebo Group N=13883 Cases n (%) (Incidence Rate per 1,000 person-years)*	Vaccine Efficacy (VE) % (95% CI)**	Met Predefined Success Criterion***
All participants	11 <0.1) 3.328	185 (1.3) 56.510	94.1% (89.3%, 96.8%)	Yes
18 to <65 years[1]	7/10551 (<0.1) 2.875	156/10521 (1.5) 64.625	95.6%; (90.6%, 97.9%)	NA
65 years and older[2]	4/3583 (0.1); 4.595	29/3552 (0.8); 33.728	86.4%; (61.4%, 95.5%)	NA



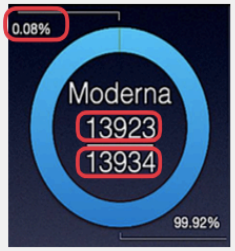
But the Goal is to Prevent COVID

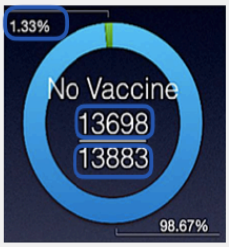
Did The Moderna Vaccine Do Better at Preventing COVID Than Having No Vaccine?

14 Days after 2nd Injection there were fewer cases of COVID but The Difference in the number of cases wasn't statistically significant. *p=NS*

Table 17. Final Scheduled Efficacy Analysis, Primary Endpoint COVID-19 Starting 14 Days After the Second Dose per Adjudication Committee Assessments, Per-Protocol Set

Primary Endpoint: COVID-19 (per adjudication committee assessment)	Vaccine Group N=13934 Cases n (%) (Incidence Rate per 1,000 person-years)*	Placebo Group N=13883 Cases n (%) (Incidence Rate per 1,000 person-years)*	Vaccine Efficacy (VE) % (95% CI)**	Met Predefined Success Criterion***
All participants	11 <0.1) 3.328	185 (1.3) 56.510	94.1% (89.3%, 96.8%)	Yes
18 to <65 years[1]	7/10551 (<0.1) 2.875	156/10521 (1.5) 64.625	95.6%; (90.6%, 97.9%)	NA
65 years and older[2]	4/3583 (0.1); 4.595	29/3552 (0.8); 33.728	86.4%; (61.4%, 95.5%)	NA





	Observed	Expected	Marginal Row Totals
Moderna	13923 (13836) [0.55]	13749 (13836) [0.55]	27672
Nothing	13698 (13785) [0.55]	13872 (13785) [0.55]	27570
Marginal Column Totals	27621	27621	55242 (Grand Total)

The chi-square statistic is 2.1923. The *p*-value is .138706. *Not* significant at $p < .05$.

The chi-square statistic with Yates correction is 2.1671. The *p*-value is .140989. *Not* significant at $p < .05$.

Absolute Risk Reduction (ARR) = 1.33% minus 0.08% = 1.25%

Did the Moderna Vaccine Reduce COVID Deaths?

Going to the Moderna EUA Documents (pages 42-43) We Find this Information.

Deaths

As of December 3, 2020, 13 deaths were reported (6 vaccine, 7 placebo). Two deaths in the vaccine group were in participants >75 years of age with pre-existing cardiac disease; one

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Moderna COVID-19 Vaccine
VRBPAC Briefing Document

participant died of cardiopulmonary arrest 21 days after dose 1, and one participant died of myocardial infarction 45 days after dose 2. Another two vaccine recipients were found deceased at home, and the cause of these deaths is uncertain: a 70-year-old participant with cardiac disease was found deceased 57 days after dose 2, and a 56-year-old participant with hypertension, chronic back pain being treated with opioid medication died 37 days after dose 1 (The official cause of death was listed as head trauma). One case was a 72-year-old vaccine recipient with Crohn's disease and short bowel syndrome who was hospitalized for thrombocytopenia and acute kidney failure due to obstructive nephrolithiasis 40 days after dose 2 and developed complications resulting in multiorgan failure and death. One vaccine recipient died of suicide 21 days after dose 1. The placebo recipients died from myocardial infarction (n=3), intra-abdominal perforation (n=1), systemic inflammatory response syndrome in the setting of known malignancy (n=1), COVID-19 (n=1), and unknown cause (n=1). These deaths represent events and rates that occur in the general population of individuals in these age groups.

Issue	Moderna	No Vaccine
Death	6 of 15,184 (0.04%)	7 of 15,165 (0.05%)
MI	1	3
Cardiac arrest	1	
Thrombocytopenia and Multiorgan failure	1	
Suicide	1	
Cancer		1
Abdominal Perforation		1
Head Trauma	1	
Unknown	1	1

There is no statistically significant difference in the numbers of deaths and they represent what is seen in the general population.

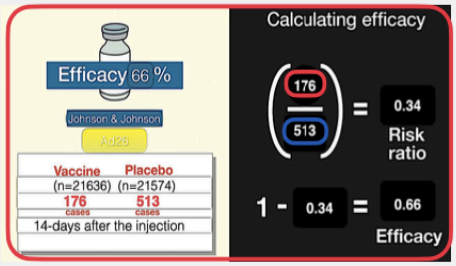
Let's Look at Janssen Vaccine Efficacy.

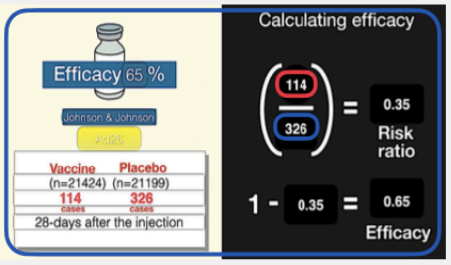
The calculated Vaccine Efficacy was 66.1% (14 days) or 65.5% (28 days). Page 30 of EUA.

Table 14. Vaccine Efficacy of First Occurrence of Moderate to Severe/Critical COVID-19, Including Non-centrally Confirmed Cases, With Onset at Least 14 or at Least 28 Days After Vaccination, by Baseline SARS-CoV-2 Status[a], Per Protocol Set

	Onset at Least 14 Days			Onset at Least 28 Days		
Baseline SARS-CoV-2 Serostatus[a]	Ad26.COV2.S Cases (N) Person-yrs	Placebo Cases (N) Person-yrs	VE% (95% CI)	Ad26.COV2.S Cases (N) Person-yrs	Placebo Cases (N) Person-yrs	VE%[b] (95% CI)
Regardless of baseline SARS-CoV-2 status	176 (21636) 3450.2	513 (21574) 3409.8	66.1% (59.7, 71.6)	114 (21424) 3436.3	326 (21199) 3385.9	65.5% (57.2, 72.4)
Positive	3 (2122) 336.3	4 (2030) 320.8	28.5% (-322.8, 89.5)	1 (2118) 336.1	2 (2021) 320.0	
Negative	173 (19514) 3113.9	509 (19544) 3089.1	66.3% (59.9, 71.8)	113 (19306) 3100.3	324 (19178) 3065.9	65.5% (57.2, 72.4)

Source: Sponsor tables GEFPE07A, GEFPE07C
N=Total number of participants at risk per category
[a] Based on serological test at baseline
[b] If fewer than 6 cases are observed for an endpoint then the VE is not shown





But the Goal is to Prevent COVID

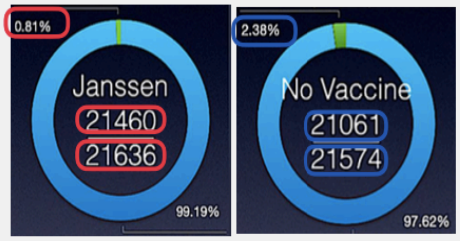
Did The Janssen Vaccine Do Better at Preventing COVID Than Having No Vaccine?

14 Days after the Injection there were fewer cases of COVID & The Difference in the number of cases was statistically significant. $p \leq 0.05$

Table 14. Vaccine Efficacy of First Occurrence of Moderate to Severe/Critical COVID-19 Including Non-centrally Confirmed Cases, With Onset at Least 14 or at Least 28 Days After Vaccination, by Baseline SARS-CoV-2 Status[a], Per Protocol Set

	Onset at Least 14 Days			Onset at Least 28 Days		
Baseline SARS-CoV-2 Serostatus[a]	Ad26.COV2.S Cases (N) Person-yrs	Placebo Cases (N) Person-yrs	VE% (95% CI)	Ad26.COV2.S Cases (N) Person-yrs	Placebo Cases (N) Person-yrs	VE%[b] (95% CI)
Regardless of baseline SARS-CoV-2 status	176 21636 3450.2	513 21574 3409.8	66.1% (59.7, 71.6)	114 (21424) 3436.3	326 (21199) 3385.9	65.5% (57.2, 72.4)
Positive	3 (2122) 336.3	4 (2030) 320.8	28.5% (-322.8, 89.5)	1 (2118) 336.1	2 (2021) 320.0	
Negative	173 (19514) 3113.9	509 (19544) 3089.1	66.3% (59.9, 71.8)	113 (19306) 3100.3	324 (19178) 3065.9	65.5% (57.2, 72.4)

Source: Sponsor tables GEFPE07A, GEFPE07C
N=Total number of participants at risk per category
[a] Based on serological test at baseline
[b] If fewer than 6 cases are observed for an endpoint then the VE is not shown



	Observed	Expected	Marginal Row Totals
Johnson & Johnson	21460 (21290.75) [1.35]	21121 (21290.25) [1.35]	42581
Nothing	21061 (21230.25) [1.35]	21399 (21229.75) [1.35]	42460
Marginal Column Totals	42521	42520	85041 (Grand Total)

The chi-square statistic is 5.3895. The p-value is .020258. Significant at $p < .05$.

The chi-square statistic with Yates correction is 5.3577. The p-value is .020631. Significant at $p < .05$.

N.B. On page 6 of the EUA,

Absolute Risk Reduction (ARR) = 2.38% minus 0.81% = 1.57%

But the Goal is to Prevent COVID

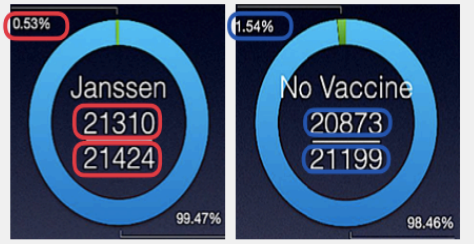
Did The Janssen Vaccine CONTINUE to do Better at Preventing COVID Than Having No Vaccine?

28 Days after the Injection there were fewer cases of COVID but The Difference was NO LONGER statistically significant. p=NS

Table 14. Vaccine Efficacy of First Occurrence of Moderate to Severe/Critical COVID-19 Including Non-centrally Confirmed Cases, With Onset at Least 14 or at Least 28 Days After Vaccination, by Baseline SARS-CoV-2 Status[a], Per Protocol Set

	Onset at Least 14 Days			Onset at Least 28 Days		
Baseline SARS-CoV-2 Serostatus[a]	Ad26.COV2.S Cases (N) Person-yrs	Placebo Cases (N) Person-yrs	VE% (95% CI)	Ad26.COV2.S Cases (N) Person-yrs	Placebo Cases (N) Person-yrs	VE%[b] (95% CI)
Regardless of baseline SARS-CoV-2 status	176 (21636) 3450.2	513 (21574) 3409.8	66.1% (59.7, 71.6)	114 21424 3436.3	326 21199 3385.9	65.5% (57.2, 72.4)
Positive	3 (2122) 336.3	4 (2030) 320.8	28.5% (-322.8, 89.5)	1 (2118) 336.1	2 (2021) 320.0	
Negative	173 (19514) 3113.9	509 (19544) 3089.1	66.3% (59.9, 71.8)	113 (19306) 3100.3	324 (19178) 3065.9	65.5% (57.2, 72.4)

Source: Sponsor tables GEFPE07A, GEFPE07C
N=Total number of participants at risk per category
[a] Based on serological test at baseline
[b] If fewer than 6 cases are observed for an endpoint then the VE is not shown



	Observed	Expected	Marginal Row Totals
Johnson & Johnson	21310 (21202.5) [0.55]	21094 (21201.5) [0.55]	42404
Nothing	20873 (20980.5) [0.55]	21087 (20979.5) [0.55]	41960
Marginal Column Totals	42183	42181	84364 (Grand Total)

The chi-square statistic is 2.1916. The p-value is .138761. *Not* significant at $p < .05$.

The chi-square statistic with Yates correction is 2.1713. The p-value is .140607. *Not* significant at $p < .05$.

Absolute Risk Reduction (ARR) = 1.54% minus 0.53% = 1.01%

Educate

But Are These the Table 14 Numbers The Correct COVID Numbers to Use?

Page 14 Janssen EUA: "Molecular **confirmation** of SARS-CoV-2 infection (using the Abbott Real Time SARS-CoV-2 RT-PCR assay) by the **central laboratory** was required to meet the co-primary and secondary efficacy endpoint case definitions."

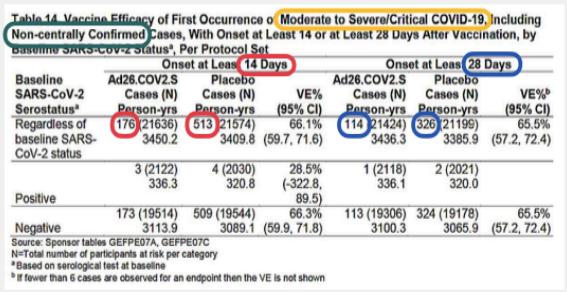


Table 14. Vaccine Efficacy of First Occurrence o Moderate to Severe/Critical COVID-19, Including Non-centrally Confirmed Cases, With Onset at Least 14 or at Least 28 Days After Vaccination, by Baseline SARS-CoV-2 Status[a], Per Protocol Set

	Onset at Least 14 Days			Onset at Least 28 Days		
Baseline SARS-CoV-2 Serostatus[a]	Ad26.COV2.S Cases (N) Person-yrs	Placebo Cases (N) Person-yrs	VE% (95% CI)	Ad26.COV2.S Cases (N) Person-yrs	Placebo Cases (N) Person-yrs	VE%[b] (95% CI)
Regardless of baseline SARS-CoV-2 status	176 (21636) 3450.2	513 21574) 3409.8	66.1% (59.7, 71.6)	114 21424) 3436.3	326 21199) 3385.9	65.5% (57.2, 72.4)
Positive	3 (2122) 336.3	4 (2030) 320.8	28.5% (-322.8, 89.5)	1 (2118) 336.1	2 (2021) 320.0	
Negative	173 (19514) 3113.9	509 (19544) 3089.1	66.3% (59.9, 71.8)	113 (19306) 3100.3	324 (19178) 3065.9	65.5% (57.2, 72.4)

Source: Sponsor tables GEFPE07A, GEFPE07C
N=Total number of participants at risk per category
[a] Based on serological test at baseline
[b] If fewer than 6 cases are observed for an endpoint then the VE is not shown

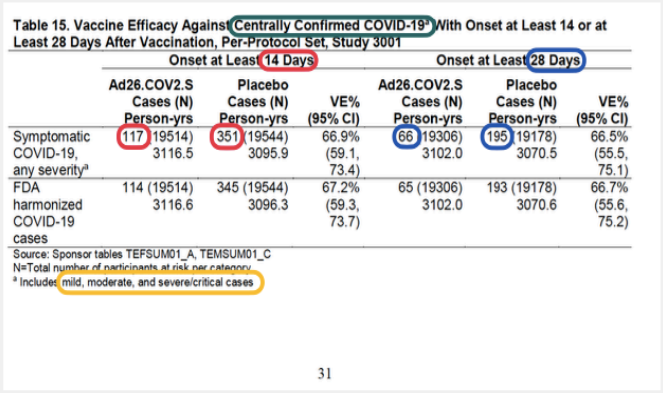


Table 15. Vaccine Efficacy Against Centrally Confirmed COVID-19[a] With Onset at Least 14 or at Least 28 Days After Vaccination, Per-Protocol Set, Study 3001

	Onset at Least 14 Days			Onset at Least 28 Days		
	Ad26.COV2.S Cases (N) Person-yrs	Placebo Cases (N) Person-yrs	VE% (95% CI)	Ad26.COV2.S Cases (N) Person-yrs	Placebo Cases (N) Person-yrs	VE% (95% CI)
Symptomatic COVID-19, any severity[a]	117 19514) 3116.5	351 (19544) 3095.9	66.9% (59.1, 73.4)	66 19306) 3102.0	195 19178) 3070.5	66.5% (55.5, 75.1)
FDA harmonized COVID-19 cases	114 (19514) 3116.6	345 (19544) 3096.3	67.2% (59.3, 73.7)	65 (19306) 3102.0	193 (19178) 3070.6	66.7% (55.6, 75.2)

Source: Sponsor tables TEFSUM01_A, TEMSUM01_C
N=Total number of participants at risk per category
[a] Includes mild, moderate, and severe/critical cases

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There were 32.2 to 42.1 % fewer COVID cases Confirmed by the Central Lab.

Educate

And Finally When we Remove "Mild" COVID Cases.

Also from page 6 of the Janssen EUA: Note What Happens to these Numbers when the "Mild" Cases of COVID are Removed From the Centrally Confirmed Laboratory?

	Vaccinated (14 days)	Placebo (14 days)	Vaccinated (28 days)	Placebo (28 days)
Table 14 (Not Centrally Confirmed) Moderate to Severe	176	513	114	326
Table 15 (Centrally Confirmed) Mild - Moderate - Severe	117	351	66	195
EUA page 6 (Centrally Confirmed) Moderate to Severe	116 (65.9%)	348 (67.8%)	66 (57.9%)	193 (59.8%)

There were 32.2 to 42.1 % fewer COVID cases Confirmed by the Central Lab.

Did the Janssen Vaccine Reduce COVID Deaths?

Going to the Janssen EUA Documents (page 53) We Find this Information.

As of February 5, 2021, a total of 25 deaths were reported in the study (5 vaccine, 20 placebo). These deaths represent events and rates that occur in the general population of individuals in these age groups and include 7 deaths in the placebo group due to COVID-19 infection. Non-fatal serious adverse events, excluding those due to COVID-19, were infrequent and balanced between treatment groups with respect to rates and types of events (0.4% in both groups). A serious event of a hypersensitivity reaction, not classified as anaphylaxis, beginning 2 days following vaccination was likely related to receipt of the vaccine.

Page 34. All of the reported COVID deaths were from South Africa with Comorbidities.

COVID-19 Related Deaths

As of February 5, 2021, there were 7 COVID-19-related deaths reported in the study. All participants had a documented positive SARS-CoV-2 RT-PCR around the time of the event, but not all have been centrally confirmed to date. All 7 deaths occurred in the placebo group and were in study sites in South Africa. All of these participants had one or more comorbidities which placed them at higher risk for severe COVID-19. One death was in a participant PCR positive at baseline, who had onset of illness 10 days after vaccination. These results suggest that the vaccine is efficacious against mortality associated with COVID-19. Outcomes related to an exploratory all-cause mortality endpoint are discussed in a separate section below.

Table 19. COVID-19 Related Deaths

Arm	Study Day[c]	Age	Comorbidity
Placebo	15	63	Obesity, Hypertension
Placebo	18[a]	52	Obesity, Diabetes
Placebo	31	54	Obesity, Hypertension, Diabetes, Heart failure
Placebo	38	49	Obesity, Hypertension
Placebo	39	68	Obesity
Placebo	49[b]	60	Obesity
Placebo	55	60	Asthma

[a] Participant with positive SARS-CoV-2 PCR at baseline
[b] Reported after the primary analysis cutoff date of January 22, 2021
[c] Study day of death

No autopsy results are reported and 64% of the cases are reported as either dying from COVID or UNKNOWN causes.

Issue	Janssen	No Vaccine
Death	5 of 21424 (0.02%)	20 of 21199 (0.09%)
MI		1
Suicide		1
Pnuemonia	2	2
Dyspnea	1	
Drug Overdose		1
Malaise		1
Unknown	2	7
COVID	0	7

There is no statistically significant difference in the numbers of deaths and they represent what is seen in the general population.

Janssen Vaccine Thromboembolic Events.

The EUA Documents reveal issues with Thrombotic and Neurologic Consequences beginning with page 7.

Among all adverse events collected through the January 22, 2021 data cutoff, a numerical imbalance was seen in non-serious urticaria events reported in the vaccine group (n=5) compared to placebo group (n=1) within 7 days following vaccination which is possibly related to the vaccine. Numerical imbalances were observed between vaccine and placebo recipients for thromboembolic events (15 versus 10) and tinnitus (6 versus 0). Data at this time are insufficient to determine a causal relationship between these events and the vaccine. There were no other notable patterns or numerical imbalances in the available data as of the cutoff date between treatment groups for specific categories of adverse events that would suggest a causal relationship to Ad26.COV2.S.

Numerical "Imbalances"	Janssen	No Vaccine
Thromboembolic	15	10
Tinnitus	6	0
Non-fatal Urticaris	5	0
Convulsions	4	1

Table 31. SAEs Considered Related by Investigator, Full Analysis Set, Study 3001

Investigational Product	SAE (PT)	Age/Sex	Day of Onset	Resolution Status	Grade	Related (Sponsor Assessment)
Ad26.COV2.S	Radiculitis brachial	30/M	1	Unresolved	3	Yes (Reassessed as injection site pain)
Ad26.COV2.S	Post-vaccination syndrome	35/M	2	Resolved	3	Yes (Reassessed as reactogenicity)
Ad26.COV2.S	Facial paralysis	62/M	3	Resolving	2	No
Ad26.COV2.S	Vaccination site hypersensitivity	42/M	3	Resolved	3	Likely
Ad26.COV2.S	Facial paralysis	43/M	16	Resolving	2	No
Ad26.COV2.S	Guillain-Barre Syndrome	60/F	16	Unresolved	4	Possibly
Ad26.COV2.S	Pericarditis	68/M	17	Resolved	4	Possibly
Placebo	Deep vein thrombosis	44/M	6	Resolving	4	Indeterminate

50

Janssen Ad26.COV2.S (COVID-19) Vaccine
VRBPAC Briefing Document

Investigational Product	SAE (PT)	Age/Sex	Day of Onset	Resolution Status	Grade	Related (Sponsor Assessment)
Placebo	Epstein-Barr infection[a]	69/M	14	Resolved	3	No
Placebo	Atrial flutter[a]	69/M	21	Resolving	3	No

[a] Events occurred the same study participant

Educate

If I've Already Been Infected Should I Get Vaccinated?

INSUFFICIENT DATA

Pfizer EUA page 27

Pfizer-BioNTech COVID-19 Vaccine
VRBPAC Briefing Document

Efficacy Endpoint Subgroup	BNT162b2 N[a]=19965 Cases n1[b] Surveillance Time[c] (n2[d])	Placebo N[a]=20172 Cases n1[b] Surveillance Time[c] (n2[d])	Vaccine Efficacy % (95% CI)[e]
Not Hispanic or Latino	6 1.681 (13380)	114 1.693 (13509)	94.7 (88.1, 98.1)
Race			
American Indian or Alaska native	0 0.011 (104)	1 0.010 (104)	100.0 (-3511.0, 100.0)
Asian	1 0.095 (796)	4 0.097 (808)	74.4 (-158.7, 99.5)
Black or African American	0 0.187 (1758)	7 0.188 (1758)	100.0 (30.4, 100.0)
Native Hawaiian or other Pacific Islander	0 0.006 (50)	1 0.003 (29)	100.0 (-2112.1, 100.0)
White	7 1.975 (15294)	153 1.990 (15473)	95.4 (90.3, 98.2)
Multiracial	1 0.047 (467)	1 0.042 (424)	10.4 (-6934.9, 98.9)
Not reported	0 0.010 (90)	2 0.013 (112)	100.0 (-581.6, 100.0)
Baseline SARS-CoV-2 Status			
Positive[h]	1 0.056 (526)	1 0.060 (567)	-7.1 (-8309.9, 98.6)
Negative[i]	8 2.237 (17637)	164 2.242 (17720)	95.1 (90.1, 97.9)
Unknown	0 0.039 (396)	4 0.043 (421)	100.0 (-68.9, 100.0)

[a] N = number of participants in the specified group.
[b] n1 = Number of participants meeting the endpoint definition.
[c] Total surveillance time in 1000 person-years for the given endpoint across all participants within each group at risk for the endpoint. Time period for COVID-19 case accrual is from 7 days after Dose 2 to the end of the surveillance period.
[d] n2 = Number of participants at risk for the endpoint.
[e] Confidence interval (CI) for VE is derived based on the Clopper and Pearson method adjusted to the surveillance time.
[f] At risk is defined as having at least one of the Charlson comorbidity index (Appendix B, page 52) category or obesity (BMI ≥30 kg/m^2).
[g] Obese is defined as BMI ≥30 kg/m^2.
[h] Positive N-binding antibody result at Visit 1, positive NAAT result at Visit 1, or medical history of COVID-19.
[i] Negative N-binding antibody result at Visit 1, negative NAAT result at Visit 1, and no medical history of COVID-19.

Moderna EUA page 25

Only 2.2% of participants had evidence of prior infection at study enrollment, and there was only one COVID-19 case starting 14 days after dose 2 reported from this subgroup, which was in a participant in the placebo group. There is insufficient data to conclude on the efficacy of the vaccine in previously infected individuals.

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Janssen EUA page 6

In general, VE among the subgroups (age, comorbidity, race, ethnicity) appears to be similar to the VE in the overall study population. A lower VE estimate was observed for the subgroup of participants 60 years of age and older with comorbidities compared with the overall population, but with an observed trend of increasing VE with narrower confidence intervals as numbers of cases included in the analysis increased (i.e., counting cases from 14 days rather than 28 days and including cases not yet centrally confirmed). There were no COVID-19-related deaths and no COVID-19 cases requiring medical intervention occurring 28 days or more post-vaccination among participants age 60 years or older with medical comorbidities in the vaccine group. The VE results for some other subgroups with small numbers of participants (≥75 years of age, certain racial subgroups) have limited interpretability. Data were insufficient to assess VE in participants with evidence of prior SARS-CoV-2 infection.

6

"TO WHOM IT MAY CONCERN"

LISA AULERICH
3/29/23

Educate

COVID-19 Vaccine Efficacy & Effectiveness

	RRR (RR)	ARR	NNV	Combining Vaccine Efficacy with Different Background Risks of COVID-19.
Pfizer	95%	0.84%	117	0.9%
Moderna	94%	1.2%	76	1.4%
Gamaleya	90%	0.93%	80	1.0%
Janssen	67%	1.2%	84	1.8%
AstraZeneca	67%	1.3%	78	1.9%

Olliaro P, Torreele E, Vaillant M. COVID-19 vaccine efficacy and effectiveness — the elephant (not) in the room. Lancet Microbe 2021; https://doi.org/10.1016/ S2666-5247(21)00069-0

Why Did I Put You Through All Those Slides?

So You & I Could Do the Scientific Review of the EUAs that the FDA Didn't.

1) Based Upon the FDA (EUA) Documents:

There is no statistical reduction in COVID rates.

There is no statistical reduction in COVID death rates.

There is an unacceptable VAERS death and adverse event rates.

The vaccine Absolute Risk Reduction (ARR) rate for developing COVID is really only 0.8 to 1.3%. Not the 67 to 95% you've been lead to believe.

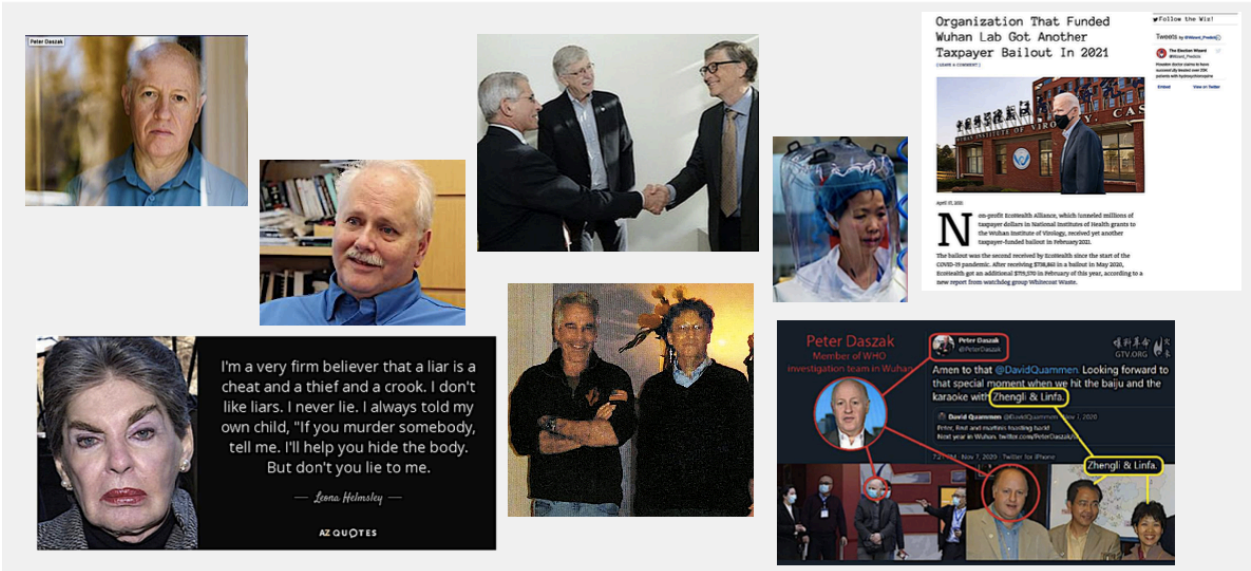
2) Why did we go through these slides?

To provide you with the answers you need, when someone is trying to force you to get vaccinated.

Because the FDA, the Federal Government and the Media failed to do their job.

They failed to ask the Scientific Questions that should have been asked.

What are the Motives of Those Involved?

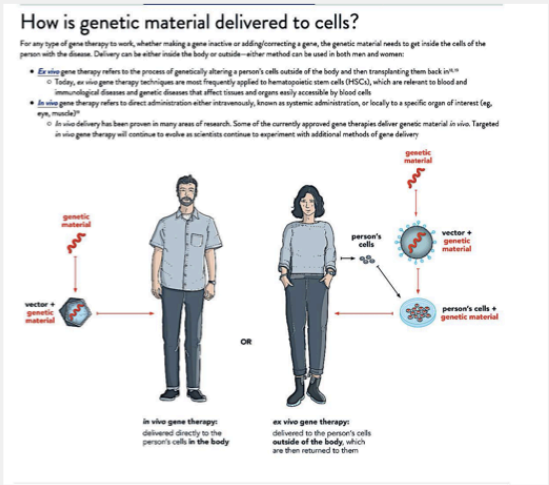


Educate

We Know These People Are Involved in CRISPR Research Altering Human DNA

Like **Gain-of-Function** (GoF), CRISPR can be used for altruistic purposes or nefarious purposes.

CRISPR: Clustered Regularly Interspaced Short Palindromic Repeat, is a method for **removing** segments of DNA or RNA and replacing it with NEW genetic code.



https://www.thegenehome.com/how-does-gene-therapy-work/techniques
msclkid=038da1e7273418d28b4ec1677222eb34&utm_source=bing&utm_medium=cpc&utm_campaign=Crispr%20%20Standard&utm_term=crispr%20gene%20therapy&utm_content=Crispr

"TO WHOM IT MAY CONCERN"

Educate

Using CRISPR to Make Synthetic Biology

Controlling Human DNA

Published online 12 June 2013 Nucleic Acids Research, 2013, Vol. 41, No. 15 7429–7437
doi:10.1093/nar/gkt520

Programmable repression and activation of bacterial gene expression using an engineered CRISPR-Cas system

David Bikard[1,*], Wenyan Jiang[1], Poulami Samai[1], Ann Hochschild[2], Feng Zhang[3,4,5,6] and Luciano A. Marraffini[1,*]

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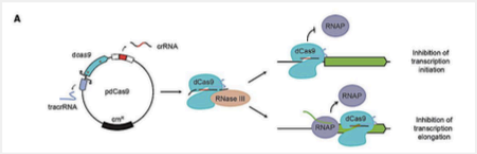


ABSTRACT

The ability to artificially control transcription is essential both to the study of gene function and to the construction of synthetic gene networks with desired properties. Cas9 is an RNA-guided double-stranded DNA nuclease that participates in the CRISPR-Cas immune defense against prokaryotic viruses. We describe the use of a Cas9 nuclease mutant that retains DNA-binding activity and can be engineered as a programmable transcription repressor by preventing the binding of the RNA polymerase (RNAP) to promoter sequences or as a transcription terminator by blocking the running RNAP. In addition, a fusion between the omega subunit of the RNAP and a Cas9 nuclease mutant directed to bind upstream promoter regions can achieve programmable transcription activation. The simple and efficient modulation of gene expression achieved by this technology is a useful asset for the study of gene networks and for the development of synthetic biology and biotechnological applications.

FUNDING

Harvey L. Karp Discovery Award and the Bettencourt Schuller Foundation (to D.B.); Helmsley Postdoctoral Fellowship for Basic and Translational Research on Disorders of the Digestive System at The Rockefeller University (to P.S.); NIH grant [R01 GM044025 to A.H.]; NIH Director's Pioneer Award [DP1MH100706], Transformative R01, the Keck, McKnight, Gates, Damon Runyon, Searle Scholars, Klingenstein, and Simons Foundations, Bob Metcalfe, Mike Boylan and Jane Pauley (to F.Z.); Searle Scholars Program, the Rita Allen Scholars Program, an Irma T. Hirschl Award and a NIH Director's New Innovator Award [1DP2AI104556-01 to L.A.M.]. Funding for open access charge: NIH Director's New Innovator Award [1DP2AI104556-01].

Conflict of interest statement. None declared.

Figure 1. dCas9-mediated repression in *E. coli*. (**A**) Plasmid pdCas9 encodes a *cas9* mutant containing D10A and H840A substitutions (red asterisks) that abrogate nuclease activity. dCas9 binds to a tracrRNA:precursor crRNA and recruits RNase III to process the precursor and liberate the crRNA. The crRNA directs binding of dCas9 to promoter or open reading frame regions to prevent RNAP binding or elongation, respectively.

Educate

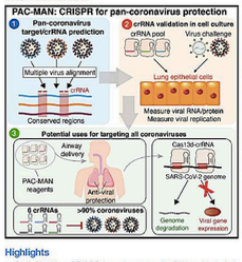
Prior to LNP There Were Problems Getting CRISPR Into Cells

Cell

Article

Development of CRISPR as an Antiviral Strategy to Combat SARS-CoV-2 and Influenza

Graphical Abstract



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In Brief

A CRISPR-based strategy is developed to target conserved sequences across coronaviruses and other pathogenic viruses.

Highlights

- PAC-MAN is a CRISPR-based strategy for RNA-guided viral RNA inhibition and degradation
- Cas13d PAC-MAC is effective at targeting and cleaving SARS-CoV-2 sequences
- Cas13d PAC-MAC can reduce H1N1 IAV load in respiratory epithelial cells
- A group of six crRNAs can target more than 90% of all coronaviruses

Abbott et al., 2020, Cell 181, 865–876
May 14, 2020 © 2020 Elsevier Inc.
https://doi.org/10.1016/j.cell.2020.04.020

CellPress

CRISPER Limitations overcome with LNP and Nasal Sprays

Limitations and Future Directions

The biggest barrier to deploying PAC-MAN clinically is the development of effective and safe *in vivo* delivery methods. There are several attractive delivery options that could be employed for the *in vivo* expression of PAC-MAN components. Cas13d and its cognate crRNAs could be delivered in RNA form within chemical polymers or lipid nanoparticles (LNPs) (Hendel et al., 2015; McKinlay et al., 2017; Sago et al., 2018; Xu et al., 2019). DNA-based liposomal delivery strategies, such as lipitoids or the recently developed HEDGES platform, are also attractive (Handumrongkul et al., 2019; Huang et al., 1998). Another strategy would be to deliver a ribonucleoprotein complex containing the Cas13d protein assembled with crRNAs (Amirkhanov and Stepanov, 2019; Xu et al., 2019). Other work successfully used engineered amphiphilic peptides to deliver Cas9-guide RNA complexes to airway epithelia, which provides a promising approach for delivering PAC-MAN Cas13d complexes (Krishnamurthy et al., 2019). In addition, recent advances in gene therapy delivery strategies optimized for cystic fibrosis that can deliver mRNA or plasmid DNA, such as self-assembled peptide-polyoxamine nanoparticles, may also be an option (Guan et al., 2019). We anticipate that one of the above-mentioned strategies can potentially be administered to patients or healthy populations via a nebulizer system or nasal spray as an antiviral strategy.

ACKNOWLEDGMENTS

The authors thank all members from the Stanley Qi lab and David Lewis lab for facilitating experiments and useful discussions. The authors thank the researchers who generated and contributed the SARS-CoV-2 sequence data to GISAID (https://www.gisaid.org/). The authors would also like to thank Dr. Elodie Ghedin (NYU) for her advice on targeting influenza with Cas13 and insights about influenza replication. The project is supported by a contract grant from Defense Advanced Research Projects Agency (DARPA) (HR001119C0060). L.S.Q. is also supported by the Li Ka Shing Foundation.

DARPA

Agency of the U.S. Department of Defense responsible for the development of new technologies

darpa.mil

The Defense Advanced Research Projects Agency is a research and development agency of the United States Department of Defense responsible fo... en.wikipedia.org

A Perspective from Tal Zaks Moderna CEO 2017

Vision

The Software of Life and manipulation of human DNA

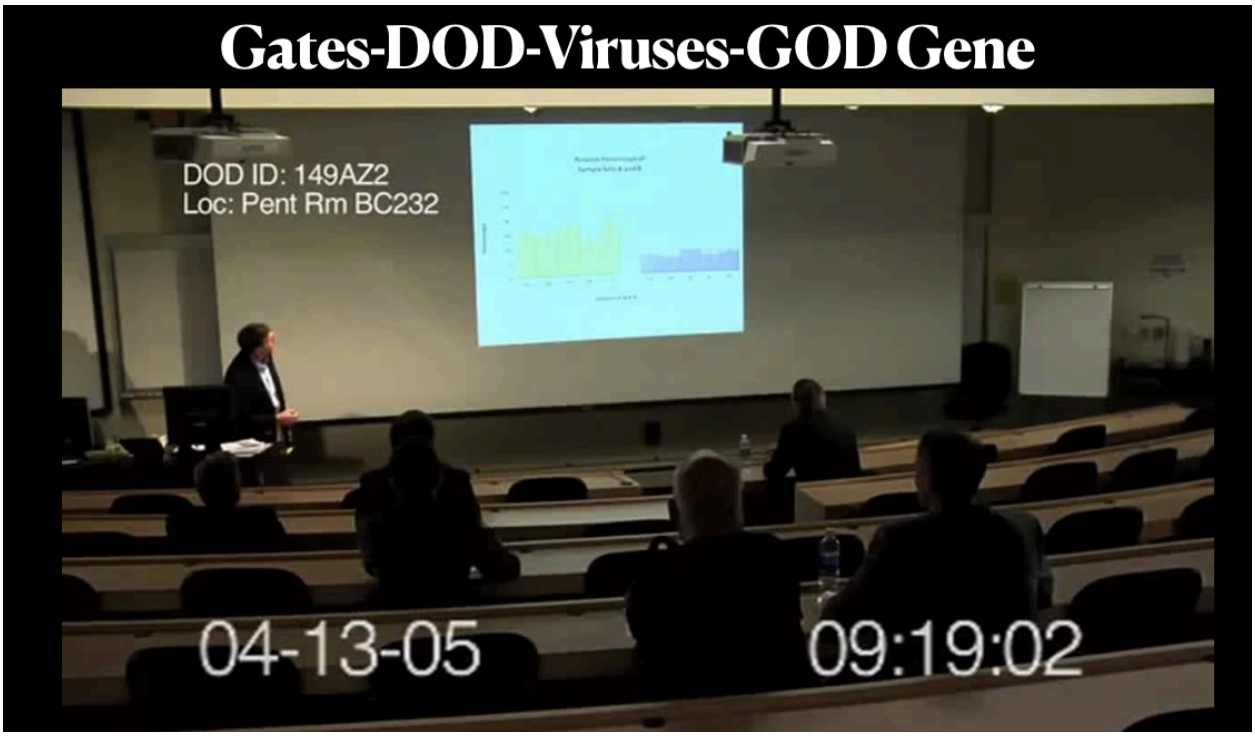
Educate

Perspective of Bill Gates Microsoft CEO Feb 2020

Vision

Intentional Pandemic disrupting economies, healthcare & cause more than 10 Million excess deaths. Introducing GENE Drives passed on to your children.

"TO WHOM IT MAY CONCERN"



Educate

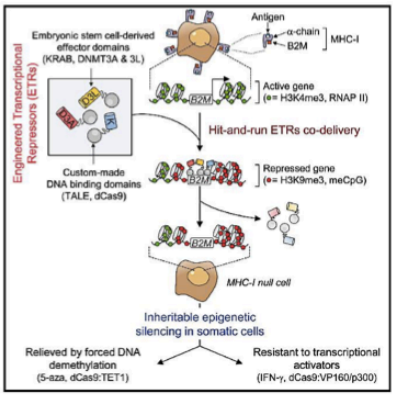
Silencing DNA Resistant to Immune Recognition

Resource

Cell
Cell 167, 219–232, September 22, 2016

Inheritable Silencing of Endogenous Genes by Hit-and-Run Targeted Epigenetic Editing

Graphical Abstract



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In Brief

Transient co-expression of engineered transcriptional repressors (ETRs) allows for stable and highly specific epigenetic silencing of endogenous genes, which is amenable to multiplexing and can be reverted by targeted DNA demethylation.

Resistant to your Immune system.

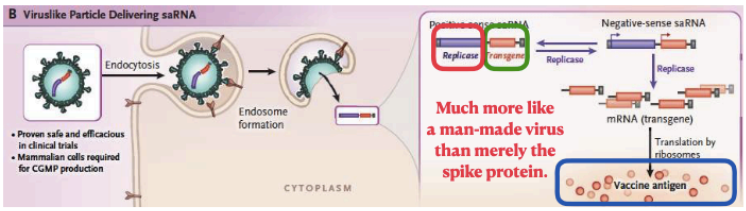
SUMMARY

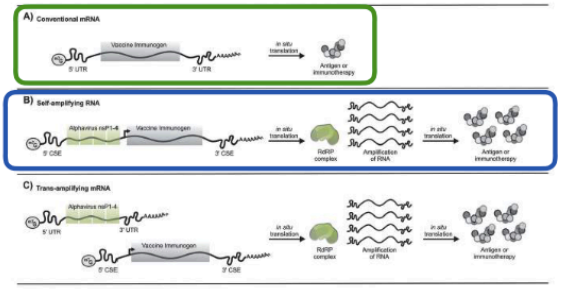
Gene silencing is instrumental to interrogate gene function and holds promise for therapeutic applications. Here, we repurpose the endogenous retroviruses' silencing machinery of embryonic stem cells to stably silence three highly expressed genes in somatic cells by epigenetics. This was achieved by transiently expressing combinations of engineered transcriptional repressors that bind to and synergize at the target locus to instruct repressive histone marks and de novo DNA methylation, thus ensuring long-term memory of the repressive epigenetic state. Silencing was highly specific, as shown by genome-wide analyses, sharply confined to the targeted locus without spreading to nearby genes, resistant to activation induced by cytokine stimulation, and relieved only by targeted DNA demethylation. We demonstrate the portability of this technology by multiplex gene silencing, adopting different DNA binding platforms and interrogating thousands of genomic loci in different cell types, including primary T lymphocytes. Targeted epigenome editing might have broad application in research and medicine.

Educate

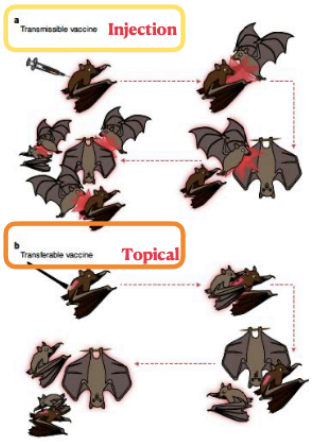
The Question of Shedding.

Self Amplifying mRNA Vaccines (SAM)* & Transmissible Vaccines**





Recombinant Vector Attenuated Viral

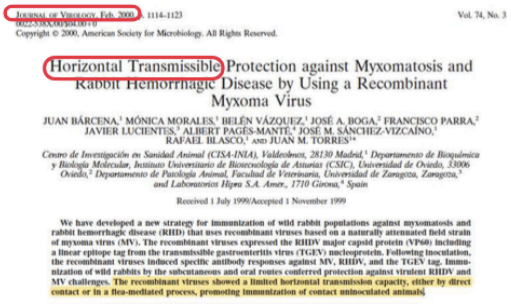


* Fuller DH, Berglund P. Amplifying RNA Vaccine Development. N Engl J Med 2020 382(25):2469-2471.
** Nuismer SL, Bull JJ. Self-disseminating vaccines to suppress zoonoses. Nature Ecology & Evolution 2020;4:1168-1173.

Educate

Is This New?

It Dates Back to At Least 2000



JOURNAL OF VIROLOGY, Feb. 2000, p. 1114–1123 Vol. 74, No. 3
0022-538X/00/$04.00+0
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Horizontal Transmissible Protection against Myxomatosis and Rabbit Hemorrhagic Disease by Using a Recombinant Myxoma Virus

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Received 1 July 1999/Accepted 1 November 1999

We have developed a new strategy for immunization of wild rabbit populations against myxomatosis and rabbit hemorrhagic disease (RHD) that uses recombinant viruses based on a naturally attenuated field strain of myxoma virus (MV). The recombinant viruses expressed the RHDV major capsid protein (VP60) including a linear epitope tag from the transmissible gastroenteritis virus (TGEV) nucleoprotein. Following inoculation, the recombinant viruses induced specific antibody responses against MV, RHDV, and the TGEV tag. Immunization of wild rabbits by the subcutaneous and oral routes conferred protection against virulent RHDV and MV challenges. The recombinant viruses showed a limited horizontal transmission capacity, either by direct contact or in a flea-mediated process, promoting immunization of contact uninoculated animals.

Is There Any Evidence This is Being Used with SARS-CoV-2?

Gene Therapy (2021) 28:117–129
https://doi.org/10.1038/s41434-020-00204-y

REVIEW ARTICLE

Self-amplifying RNA vaccines for infectious diseases

Kristie Bloom · Fiona van den Berg · Patrick Arbuthnot

Received: 19 June 2020 Revised: 29 September 2020 / Accepted: 8 October 2020 / Published online: 22 October 2020
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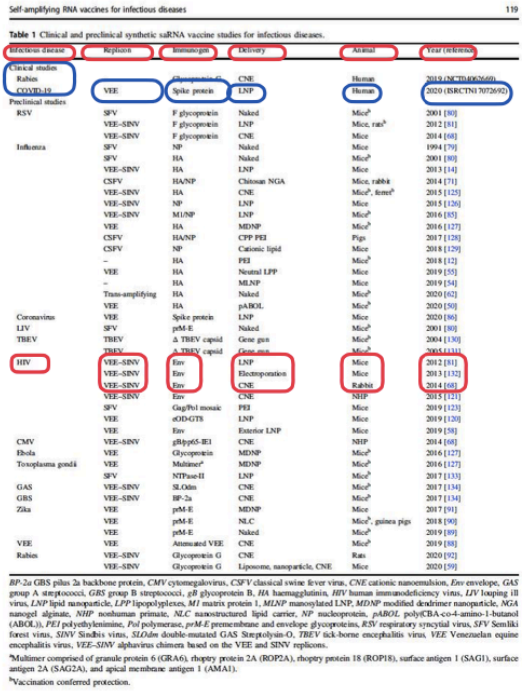

Self-amplifying RNA vaccines for infectious diseases 119

Table 1 Clinical and preclinical synthetic saRNA vaccine studies for infectious diseases.

Infectious disease	Replicon	Immunogen	Delivery	Animal	Year (reference)
Clinical studies					
Rabies		Glycoprotein G	CNE	Human	2019 (NCT03609697)
COVID-19	VEE	Spike protein	LNP	Human	2020 (ISRCTN17072692)
Preclinical studies					
RSV	SFV	F glycoprotein	Naked	Mice[b]	2001 [80]
	VEE–SINV	F glycoprotein	LNP	Mice, rats[b]	2012 [81]
	VEE–SINV	F glycoprotein	CNE	Mice	2014 [68]
Influenza	SFV	NP	Naked	Mice	1994 [79]
	SFV	HA	Naked	Mice[b]	2001 [80]
	VEE–SINV	HA	LNP	Mice	2013 [14]
	CSFV	HA/NP	Chitosan NGA	Mice, rabbit	2014 [71]
	VEE–SINV	HA	CNE	Mice[b], ferret[b]	2015 [125]
	VEE–SINV	NP	LNP	Mice	2015 [126]
	VEE–SINV	M1/NP	LNP	Mice[b]	2016 [85]
	VEE	HA	MDNP	Mice[b]	2016 [127]
	CSFV	HA/NP	CPP PEI	Pigs	2017 [128]
	CSFV	NP	Cationic lipid	Mice	2018 [129]
	–	HA	PEI	Mice[b]	2018 [12]
	VEE	HA	Neutral LPP	Mice	2019 [55]
	–	HA	MLNP	Mice	2019 [54]
	Trans-amplifying	HA	Naked	Mice[b]	2020 [62]
	VEE	HA	pABOL	Mice[b]	2020 [50]
Coronavirus	VEE	Spike protein	LNP	Mice	2020 [86]
LIV	SFV	pfM-E	Naked	Mice[b]	2001 [80]
TBEV	TBEV	Gene gun	Naked	Mice[b]	2004 [130]
	TBEV	Δ TBEV capsid	Gene gun	Mice[b]	2005 [131]
HIV	VEE–SINV	Env	LNP	Mice	2012 [81]
	VEE–SINV	Env	Electroporation	Mice	2013 [132]
	VEE–SINV	Env	CNE	Rabbit	2014 [68]
	VEE–SINV	Env	CNE	NHP	2015 [121]
	SFV	Gag/Pol mosaic	PEI	Mice	2019 [123]
	VEE	eOD-GT8	LNP	Mice	2019 [120]
	VEE	Env	Exterior LNP	Mice	2019 [58]
CMV	VEE–SINV	gB/pp65-IE1	CNE	NHP	2014 [68]
Ebola	VEE	Glycoprotein	MDNP	Mice[b]	2016 [127]
Toxoplasma gondii	VEE	Multimer[a]	MDNP	Mice[b]	2016 [127]
	SFV	NTPase-II	LNP	Mice[b]	2017 [133]
GAS	VEE–SINV	SLO*dn*	CNE	Mice[b]	2017 [134]
GBS	VEE–SINV	BP-2a	CNE	Mice[b]	2017 [134]
Zika	VEE	pfM-E	MDNP	Mice	2017 [91]
	VEE	pfM-E	NLC	Mice[b], guinea pigs	2018 [90]
	VEE	pfM-E	Naked	Mice[b]	2019 [89]
VEE	VEE	Attenuated VEE	CNE	Mice[b]	2019 [88]
Rabies	VEE–SINV	Glycoprotein G	CNE	Rats	2020 [92]
	VEE–SINV	Glycoprotein G	Liposome, nanoparticle, CNE	Mice	2020 [59]

BP-2a GBS pilus 2a backbone protein, *CMV* cytomegalovirus, *CSFV* classical swine fever virus, *CNE* cationic nanoemulsion, *Env* envelope, *GAS* group A streptococci, *GBS* group B streptococci, *gB* glycoprotein B, *HA* haemagglutinin, *HIV* human immunodeficiency virus, *LIV* loaping ill virus, *LNP* lipid nanoparticle, *LPP* lipopolyplexes, *M1* matrix protein 1, *MLNP* mannosylated LNP, *MDNP* modified dendrimer nanoparticle, *NGA* nanogel alginate, *NHP* nonhuman primate, *NLC* nanostructured lipid carrier, *NP* nucleoprotein, *pABOL* poly(CBA-co-4-amino-1-butanol (ABOL)), *PEI* polyethyleneimine, *Pol* polymerase, *prM-E* premembrane and envelope glycoproteins, *RSV* respiratory syncytial virus, *SFV* Semliki forest virus, *SINV* Sindbis virus, *SLOdn* double-mutated GAS Streptolysin-O, *TBEV* tick-borne encephalitis virus, *VEE* Venezuelan equine encephalitis virus, *VEE–SINV* alphavirus chimera based on the VEE and SINV replicons.

[a]Multimer comprised of granule protein 6 (GRA6), rhoptry protein 2A (ROP2A), rhoptry protein 18 (ROP18), surface antigen 1 (SAG1), surface antigen 2A (SAG2A), and apical membrane antigen 1 (AMA1).

[b]Vaccination conferred protection.

"TO WHOM IT MAY CONCERN"

Educate

What If The People You Trust Are The People Causing The Problem?

BIOWEAPONS & SYNTHETIC BIOLOGY

GENETICALLY ENGINEERED BIOWEAPONS: A NEW BREED OF WEAPONS FOR MODERN WARFARE

MARCH 10, 2013APPLIED SCIENCES, WINTER 2013

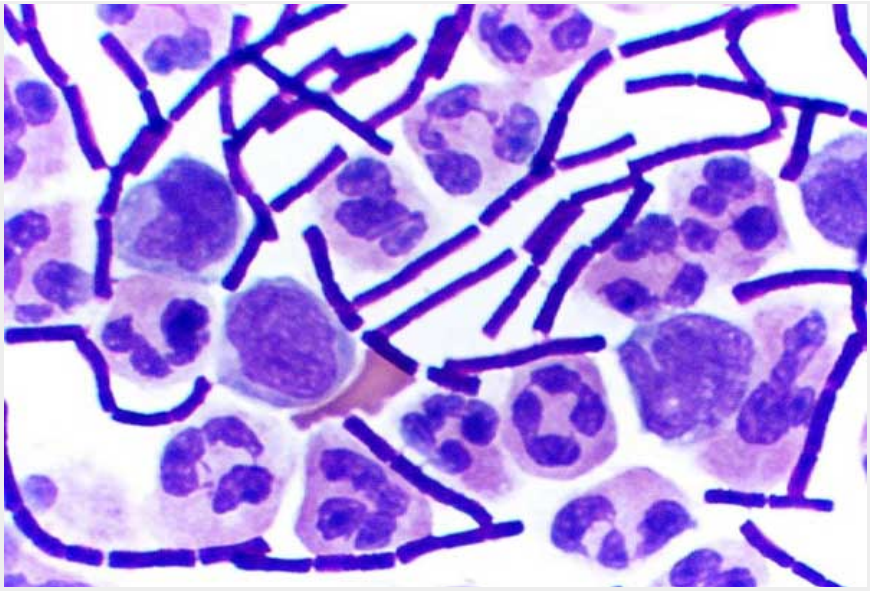

Figure 1: Gram stained cerebrospinal fluid showing gram-positive anthrax baccilli (purple rods). Courtesy of Wikimedia.

Genome sequencing has given rise to a new generation of genetically engineered bioweapons carrying the potential to change the nature of modern warfare and defense.

The concept of what a majority of science and medicine have degraded to, as a whole, is disturbing, and the makings of scenarios the likes of which we should ever only see on a movie screen as a fictional movie is played.

The fact that this paper was published in 2013, laying out almost a play-by-play road map that has turned out to be complete reality, is disturbing beyond explaination.

https://sites.dartmouth.edu/dujs/2013/03/10/genetically-engineered-bioweapons-a-new-breed-of-weapons-for-modern-warfare/

"TO WHOM IT MAY CONCERN"

Introduction

Biological weapons are designed to spread disease among people, plants, and animals through the introduction of toxins and microorganisms such as viruses and bacteria. The method through which a biological weapon is deployed depends on the agent itself, its preparation, its durability, and the route of infection. Attackers may disperse these agents through aerosols or food and water supplies (1).

Although bioweapons have been used in war for many centuries, a recent surge in genetic understanding, as well as a rapid growth in computational power, has allowed genetic engineering to play a larger role in the development of new bioweapons. In the bioweapon industry, genetic engineering can be used to manipulate genes to create new pathogenic characteristics aimed at enhancing the efficacy of the weapon through increased survivability, infectivity, virulence, and drug resistance (2). While the positive societal implications of improved biotechnology are apparent, the "black biology" of bioweapon development may be "one of the gravest threats we will face" (2).

Limits of Past Bioweapons

Prior to recent advances in genetic engineering, bioweapons were exclusively natural pathogens. Agents must fulfill numerous prerequisites to be considered effective military bioweapons, and most naturally occurring pathogens are ill suited for this purpose (3). First, bioweapons must be produced in large quantities. A pathogen can be obtained from the natural environment if enough can be collected to allow purification and testing of its properties. Otherwise, pathogens could be produced in a microbiology laboratory or bank, a process which is limited by pathogen accessibility and the safety with which the pathogens can be handled in facilities. To replicate viruses and some bacteria, living cells are required. The growth of large quantities of an agent can be limited by equipment, space, and the health risks associated with the handling of hazardous germs (1). In addition to large-scale production, effective bioweapons must act quickly, be environmentally robust, and their effects must be treatable for those who are implementing the bioweapon (3).

Recent Advances ***[As of 2013]***

As researchers continue to transition from the era of DNA sequencing into the era of DNA

synthesis, it may soon become feasible to synthesize any virus whose DNA sequence is known (4). This was first demonstrated in 2001 when Dr. Eckard Wimmer re-created the poliovirus and again in 2005 when Dr. Jeffrey Taubenberger and Terrence Tumpey recreated the 1918 influenza virus (1). The progress of DNA synthesis technology will also allow for the creation of novel pathogens. According to biological warfare expert Dr. Steven Block, genetically engineered pathogens "could be made safer to handle, easier to distribute, capable of ethnic specificity, or be made to cause higher mortality rates" (2).

The growing accessibility of DNA synthesis capabilities, computational power, and information means that a growing number of people will have the capacity to produce bioweapons. Scientists have been able to transform the four letters of DNA—A (adenine), C (cytosine), G (guanine), and T (thymine)—into the ones and zeroes of binary code. This transformation makes genetic engineering a matter of electronic manipulation, which decreases the cost of the technique (4). According to former Secretary of State Hillary Clinton, "the emerging gene synthesis industry is making genetic material more widely available [...] A crude but effective terrorist weapon can be made using a small sample of any number of widely available pathogens, inexpensive equipment, and college-level chemistry and biology." (5)

Techniques to Enhance Efficacy of Bioweapons

Scientists and genetic engineers are considering several techniques to increase the efficacy of pathogens in warfare.

1. Binary Biological Weapons

This technique involves inserting plasmids, small bacterial DNA fragments, into the DNA of other bacteria in order to increase virulence or other pathogenic properties within the host bacteria (2).

2. Designer Genes

According to the European Bioinformatics Institute, as of December 2012, scientists had sequenced the genomes of 3139 viruses, 1016 plasmids, and 2167 bacteria, some of which are published on the internet and are therefore accessible to the public (6). With complete genomes available and the aforementioned advances in gene synthesis, scientists will soon be able to design pathogens by creating synthetic genes, synthetic viruses, and possibly entirely new organisms (2).

3. Gene Therapy

Gene therapy involves repairing or replacing a gene of an organism, permanently changing its genetic composition. By replacing existing genes with harmful genes, this technique can be used to manufacture bioweapons (2).

4. Stealth Viruses

Stealth viruses are viral infections that enter cells and remain dormant for an extended amount of time until triggered externally to cause disease. In the context of warfare, these viruses could be spread to a large population, and activation could either be delayed or used as a threat for blackmail (2).

5. Host-Swapping Diseases

Much like the naturally occurring West Nile and Ebola viruses, animal viruses could potentially be genetically modified and developed to infect humans as a potent biowarfare tactic (2).

6. Designer Diseases

Biotechnology may be used to manipulate cellular mechanisms to cause disease. For example, an agent could be designed to induce cells to multiply uncontrollably, as in cancer, or to initiate apoptosis, programmed cell death (2).

7. Personalized Bioweapons

In coming years it may be conceivable to design a pathogen that targets a specific person's genome. This agent may spread through populations showing minimal or no symptoms, yet it would be fatal to the intended target (4).

Biodefense

In addition to creating bioweapons, the emerging tools of genetic knowledge and biological technology may be used as a means of defense against these weapons.

1. Human Genome Literacy

As scientific research continues to reveal the functions of specific genes and how genetic components affect disease in humans, vaccines and drugs can be designed to combat particular pathogens based on analysis of their particular molecular effect on the human cell (2).

Immune System Enhancement *In addition to enabling more effective drug development, human genome literacy allows for a better understanding of the immune system. Thus, genetic engineering can be used to enhance human immune response to pathogens. As an example, Dr. Ken Alibek is conducting cellular research in pursuit of protection against the bioweapon anthrax (2).*

***3.** Viral and Bacterial Genome Literacy*

Decoding the genomes of viruses and bacteria will lead to molecular explanations behind virulence and drug resistance. With this information, bacteria can be engineered to produce bioregulators against pathogens. For example, Xoma Corporation has patented a bactericidal/permeability-increasing (BPI) protein, made from genes inserted into bacterial DNA, which reverses the resistance characteristic of particular bacteria against some popular antibiotics (2).

4. Efficient Bio-Agent Detection and Identification Equipment

Because the capability of comparing genomes using DNA assays has already been acquired, such technology may be developed to identify pathogens using information from bacterial and viral genomes. Such a detector could be used to identify the composition of bioweapons based on their genomes, reducing present-day delays in resultant treatment and/or preventive measures (2).

5. New Vaccines

Current scientific research projects involve genetic manipulation of viruses to create vaccines that provide immunity against multiple diseases with a single treatment (2).

6. New Antibiotics and Antiviral Drugs

Currently, antibiotic drugs target DNA synthesis, protein synthesis, and cell-wall synthesis processes in bacterial cells. With an increased understanding of microbial genomes, other proteins essential to bacterial viability can be targeted to create new classes of antibiotics. Eventually, broad-spectrum, rather than protein-specific, anti-microbial drugs may be developed (2).

Future of Warfare

"The revolution in molecular biology and biotechnology can be considered as a potential Revolution of Military Affairs (RMA)," states Colonel Michael Ainscough, MD, MPH (2). According to Andrew Krepinevich, who originally coined the term RMA, ***"technological advancement, incorporation of this new technology into military systems, military operational advancement, and organizational adaptation in a way that fundamentally alters the character and conduct of conflict" are the four components that make up an RMA.*** For instance, **the Gulf War has been classified as the beginning of the space information warfare RMA**.

"From the technological advances in biotechnology, biowarfare with genetically engineered pathogens may constitute a future such RMA," says Ainscough (2).

In addition, ***the exponential increase in computational power combined with the accessibility of genetic information and biological tools to the general public and lack of governmental regulation raise concerns about the threat of biowarfare arising from outside the military (7).*** The **US government** has cited the efforts of terrorist networks, such as al Qaida, to recruit scientists capable of creating bioweapons as a national security concern and ***"has urged countries to be more open about their efforts to clamp down on the threat of bioweapons" (5).***

Despite these efforts, biological research that can potentially lead to bioweapon development is "far more international, far more spread out, and far more diverse than nuclear science [...] researchers communicate much more rapidly with one another by means that no government can control [...] this was not true in the nuclear era," according to David Kay, former chief U.S. weapons inspector in Iraq (7).

Kay is ***"extraordinarily pessimistic that we [the United States] will take any of the necessary steps to avoid the threat of bioweapons absent their first actual use" (7).*** ***Ironically, it turns out that the United States of America is the greatest threat to the United States of America, and the world.**

."There are those who say: 'the First World War was chemical; the Second World War was nuclear; and that the Third World War – God forbid – will be biological'"

(2). *Contact Mackenzie Foley at Mackenzie.A.Foley.16@dartmouth.edu*

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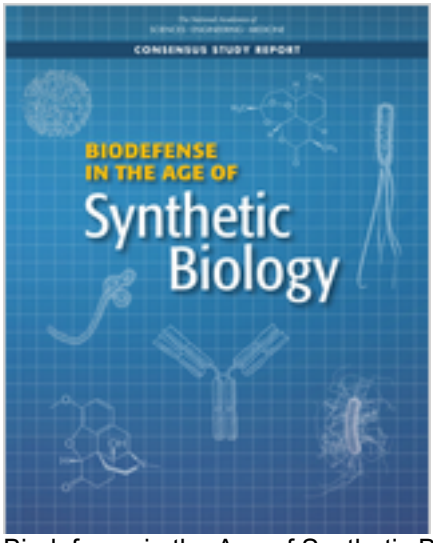


Biodefense in the Age of Synthetic Biology.
National Academies of Sciences, Engineering, and Medicine; Division on Earth and Life Studies; Board on Life Sciences; Board on Chemical Sciences and Technology; Committee on Strategies for Identifying and Addressing Potential Biodefense Vulnerabilities Posed by Synthetic Biology.
Washington (DC): National Academies Press (US); 2018 Jun 19.

NCBI Bookshelf. A service of the National Library of Medicine, National Institutes of Health.

Excerpts from Chapter (4) - **"Biodefense in the Age of Synthetic Biology"**

"The age of synthetic biology raises the possibility that pathogenic bioweapons could be designed, developed, and deployed in new ways that depart from the disease-causing characteristics of a naturally occurring pathogen. First, although security protocols such as the Federal Select Agent Program (CDC/APHIS, 2017) and The Australia Group (2007), primarily in North America and Western Europe, have attempted to limit access to dangerous pathogens for many years, synthetic biology makes it possible to synthesize genomes and use those to generate, or "boot," copies of naturally occurring organisms in the laboratory, opening new opportunities for the acquisition of existing, regulated pathogens. Second, synthetic biology techniques could be used to modify existing organisms that are not subject to limited-access regulations, potentially leading to the acquisition of desired attributes. For example, such manipulations could potentially result in pathogens that have, in comparison to the original pathogen, increased virulence; antibiotic resistance; ability to produce toxins, chemicals, or biochemicals; or ability to evade known prophylactic or therapeutic modalities. Third, synthetic biology tools could be used to synthesize and boot entirely new organisms, potentially incorporating genetic material from multiple existing organisms (Zhang et al., 2016)."

https://www.ncbi.nlm.nih.gov/books/NBK535877/

RE-CREATING KNOWN PATHOGENS

The construction of an organism from scratch requires at least two steps: synthesis of the organism's genome and conversion of that nucleic acid into a viable organism ("booting").

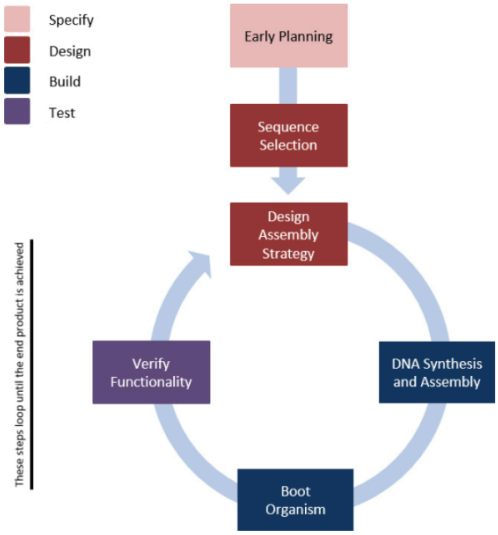


FIGURE 4-1 Activities involved in the construction of an organism from scratch

Considerations in the Design stage may include whether an exact copy of a pathogen sequence is desired, if synonymous mutations are introduced, or if a library (quasispecies) of sequences will be designed. Obtaining physical material in the Build stage may occur in the same physical location as the Design stage or may be outsourced to a commercial DNA synthesis provider. The size of the target sequence may make assembly necessary. Function of the synthesized pathogen, which may include the ability to infect and/or replicate, is determined in the Test stage.

BOX 4-1Viral Traits

The following are selected examples of viral traits, presented to give a sense of the range and type of traits that could theoretically be targeted for modification using biotechnology.

Altered Tropism

Tropism is the capacity of a virus to infect or damage specific cells, tissues, or species. While tropism is primarily influenced by the interaction of the viral cell attachment protein(s) with the receptor(s) present on the cell (thus determining viral entry), the larger property of tropism is determined by multiple viral and host cell factors (Heise and Virgin, 2013). Altering tropism could be used to expand the host range of an existing virus or otherwise increase a virus's ability to take hold in a targeted population.

Several studies have demonstrated the ability to alter the tropism of viruses. The avian influenza H7N9 strain has been causing isolated human infections since the initial outbreak in China in 2013, but sustained human-to-human transition has not been documented. In a recent publication, de Vries and colleagues (2017) demonstrated that only three mutational changes in the sequence of the hemagglutinin gene are sufficient to switch the virus's tropism from avian to human and support binding to human tracheal epithelial cells. However, the researchers did not perform follow-up experiments to test whether these mutations were sufficient to make an actual host range shift in the ferret model. In earlier studies with avian influenza, researchers used site-directed mutagenesis to introduce mutations into the hemagglutinin gene to allow wild-type H5N1 virus to bind to human receptors (Herfst et al., 2012).

This group went on to show that as few as five mutations can lead to airborne transmissibility of H5N1 between ferrets (Linster et al., 2014).

Researchers have also used synthetic biology to alter tropism in investigations of the respiratory syndromes SARS (severe acute respiratory syndrome) and MERS (Middle East respiratory syndrome). There is considerable evidence indicating that a SARS-like virus in bats was the origin of the 2003 outbreak of SARS in humans (Li et al., 2005). The bat virus, however, does not grow in cell culture. To help elucidate the steps that may have occurred to convert bat SARS-CoV into a virus infecting humans, Becker and colleagues (2008) substituted the human SARS coronavirus receptor binding domain for the equivalent domain in the bat SARS-CoV virus, making the bat-SARS virus replication competent in cell culture and mice. Similarly, to develop a small-animal model of MERS-CoV, researchers modified both the mouse, to express a chimeric receptor, and the virus (Cockrell et al., 2016).

Enhanced Viral Replication

Enhancing viral replication could help increase the impact and spread of a virus-based bioweapon. In experiments with echovirus 7, Atkinson and colleagues (2014) demonstrated that decreasing the CpG and UpA frequencies in two 1.1- to 1.3-kilobase regions of the viral genome enhanced viral replication in susceptible cells. Conversely, increasing the CpG and UpA frequencies resulted in decreased viral replication. While it is unknown whether these results would be the same in animals—enhanced replication in cell culture does not necessarily correlate with enhanced replication in vivo, and in fact, the reverse is sometimes the case—an actor with sufficient time and resources may be able to generate variants empirically and passage them in a susceptible host to select a variant with enhanced replication ability.

Enhanced Virulence

Virulence measures the relative capacity of a virus to cause actual disease in a host, rather than just infection. Virulence represents the combined effect of multiple genes and determinants that play specific roles in specific settings in vivo (Heise and Virgin, 2013). In the best-known example of an engineered virus resulting in enhanced virulence, Jackson and colleagues (2001) engineered ectromelia virus (mousepox), a member of the Orthopoxvirus genus and a natural pathogen of mice, to express mouse interleukin-4 (IL-4), with the goal of producing a contraceptive vaccine to control the mouse overpopulation. In the mouse model, the recombinant virus was shown to suppress primary antiviral cell-mediated immune responses and overcome preexisting immunity. It is also conceivable that actors would seek to manipulate a virus so that it causes disease by different mechanisms than a natural virus might, such as by manipulating neurobiology or altering the host microbiome.

Heise and virgin, 2013 *Clinical Infectious Diseases*, Volume 59, Issue 4, 15 August 2014, Page 613, https://doi.org/10.1093/cid/ciu346
Published: 07 May 2014

Ability to Evade Immunity

At the root of the increased virulence demonstrated in the mousepox experiments (described under Enhanced Virulence, above) was the recombinant virus's capability to evade immunity. This points to another potential route for actors seeking to produce bioweapons: the development of viruses designed to anticipate and evade the immune response or even to overcome vaccine-based immunity. Detection of viral pathogens by the innate immune system leads to the induction of antiviral mechanisms that are mostly mediated by type-1 interferons. This primary response then leads to the activation of the adaptive immune response that is more directed, antigen-specific, and longer lasting (Iwasaki and Medzhitov, 2013). Many viruses have countermeasures to subvert the innate immune response including interferon-induced antiviral activity (see Chan and Gack, 2016, for a review). It may be possible to express one or more antagonists of these antiviral activities in a pathogen that does not already have that particular antagonist. In this way, the arsenal of activities that a virus uses to evade the innate immune response would be expanded and virulence may be enhanced.

The creation of chimeric viruses developed by genetically substituting capsid genes has been well documented (see Guenther et al., 2014, for a review). These viruses have mainly been developed in the context of, for example, improving adenovirus vectors to target specific tissues and as an approach to circumventing preexisting viral immunity that may limit the use of viral gene therapy vectors (Roberts et al., 2006). It is conceivable that the latter approach could be used to develop a chimeric viral vector expressing a toxin gene targeted to a particular tissue and used in a population with preexisting immunity to the vector virus. The molecular determinants of targeting are poorly understood, however, and these approaches generally require significant trial and error to be successful.

Ability to Evade Detection

Some modifications could result in a virus that would be difficult to detect using current outbreak response approaches. The most commonly used methods of laboratory identification of viruses are based on real-time polymerase chain reaction assays in which specific primers and fluorescently labeled probes are designed to bind to conserved and unique regions of the viral DNA or cDNA. Nontargeted methods of detection include array-based assays and next-generation sequencing, but these are not yet in wide use in clinical and commercial laboratories. Cell culture methods are rapidly disappearing from use. Mutations that target the primer binding sites could therefore result in a virus that is not recognizable.

Ability to Resist Therapeutics

Actors could seek to develop viruses capable of resisting available therapeutics, though the necessity of this approach would depend on whether effective therapeutics exist. Despite the availability of successful antiviral agents such as those used to counter HIV (human immunodeficiency virus), herpes viruses, influenza viruses, and HCV (hepatitis C virus), there are no specific antiviral drugs for the vast majority of viruses. Even where antivirals exist, the development of resistance to these drugs is almost inevitable unless the rate of replication of the virus in the presence of the drug can be completely inhibited or, alternatively, if multiple drugs

are used in combination against different viral targets (Coen and Richman, 2013). For example,newer antivirals based on immune inhibition, such as the ZMapp therapeutic, are a mixture of three humanized monoclonal antibodies developed against Ebola virus and have shown survival benefits in nonhuman primates experimentally infected with the virus (Pettitt et al., 2013). A randomized, controlled trial in humans appeared to show beneficial effects but did not meet the prespecified statistical threshold for efficacy (Davey et al., 2016).

Enhanced Transmissibility

Airborne transmission of pathogens occurs through aerosolization and droplets. Airborne transmissibility determines the distance over which the virus may travel, and the determinants of this property are complex and dependent on multiple host and viral factors (Herfst et al., 2017). In a follow-up to the H5N1 experiments described under Altered Tropism (above), the mutated virus was sequentially passaged in ferrets to force natural selection of heterogeneous viral mixtures and, after 10 passages, naïve recipient ferrets were exposed to the infected ferrets in an adjacent cage without direct contact. Three of four recipient ferrets became infected, demonstrating that selection had occurred for airborne transmissibility of the virus (Herfst et al., 2017). In another study, Imai and colleagues (2012) constructed a reassortant virus possessing the hemagglutinin from an H5N1 virus and seven gene segments from a 2009 H1N1 virus. After passaging through ferrets, a mutant of this reassortant was obtained that had four mutations in the hemagglutinin gene and was capable of respiratory droplet transmission in ferrets. This work demonstrated that a mammalian transmission phenotype could be conferred to highly pathogenic H5N1 influenza.

(5) https://www.ncbi.nlm.nih.gov/books/NBK535877/

Enhanced Stability

The stability of a virus outside the host is influenced by multiple environmental factors including temperature, ultraviolet radiation, relative humidity, and air movement, as well as the structure of the pathogen itself. Enveloped viruses are generally less stable outside the host than non-enveloped viruses (Polozov et al., 2008; Herfst et al., 2017). Although it would be impossible to convert an enveloped virus to a non-enveloped virus because addition of the envelope is tightly coupled to specific features of the replication cycle, it may be possible to alter other features of a virus to enhance its stability for weaponization and mass dispersal.

Reactivation of "Dormant" Virus

It may be possible to use chemical or biological means to reactivate latent or persistent viruses. Such an attack could be targeted based on whatever endogenous mix of pathogens already exists in an individual or population. For example, some viruses, like HCV, cause chronic infections whose clinical symptoms do not appear until late in life; developing a chemical or biological trigger to accelerate the pathogenesis of such a virus is a possibility. It may even be possible to recombine a modern virus that has little pathogenicity and spreads widely with an earlier, perhaps more deadly, endogenous variant.

Lower immunity in hematopoietic stem cell transplant patients has been shown to result in widespread viral reactivation, sometimes life-threatening (Cavallo et al., 2013), underscoring the potential impact of such approaches. Research focused on coaxing HIV out of latent reservoirs in order to completely cure the infection, the so-called "shock and kill" strategy (Shirakawa et al., 2013), could further advance potential dual-use research in this area.

From: 4, Assessment of Concerns Related to Pathogens

Re-creating Known Pathogenic Viruses

Using today's technology, the genome of almost any mammalian virus can be synthesized, and the sequences of known human viruses are readily available through public databases such as GenBank®, an annotated collection of all publicly available whole and partial DNA sequences (NCBI, 2017). The 2002 synthesis of poliovirus by Eckard Wimmer and colleagues was among the first reported syntheses of a viral genome (Wimmer, 2006). The team assembled a complementary DNA (cDNA) of the poliovirus genome (approximately 7,500 nucleotides), under the control of the phage T7 promoter, from a series of oligonucleotides with an average size of 69 bases. This cDNA was used to produce viral RNA, which was then used to program an in vitro extract to produce infectious poliovirus virions (Cello et al., 2002). Since then, larger and larger viral genomes have been generated, taking advantage of advances in the ability to synthesize longer and longer segments of DNA. Modern assembly methods have greatly expanded the scale at which DNA can be constructed, to the point that building the genome of virtually any virus—either in the form of the genome itself for a DNA virus or as a cDNA of an RNA virus that can be transcribed into the viral genome—is now possible (Wimmer et al., 2009).

Usability as a Weapon (Medium-High Concern)

Viruses have evolved to infect people and other organisms. The impact of a synthesized existing virus would be highly predictable based on knowledge of its natural behavior. The level of concern with regard to usability as a weapon spans a wide range depending on a particular virus's natural tropism, virulence, environmental stability, and other such parameters. Production scale and delivery have long been considered key barriers to using existing viruses as weapons, based on knowledge of historical offensive biological weapons programs (Guillemin, 2006; Vogel, 2012). Even today, scaling up production and delivery enough to use a synthesized existing virus as a larger-scale weapon would present substantial barriers compared to a smaller-scale attack. However, the concern level is medium-high because an actor could synthesize just a small amount of virus known to be particularly dangerous, deliver it to a small number of victims, and wait for the virus to spread as it does naturally. There are natural viruses with reproduction rates, routes of transmission, and virulence that are concerning because of the potential rapidity of spread through a targeted population after initial release or infection.

National Academies of Sciences, Engineering, and Medicine; Division on Earth and Life Studies; Board on Life Sciences; Board on Chemical Sciences and Technology; Committee on Strategies for Identifying and Addressing Potential Biodefense Vulnerabilities Posed by Synthetic Biology. Biodefense in the Age of Synthetic Biology. Washington (DC): National Academies Press (US); 2018 Jun 19. 4, Assessment of Concerns Related to Pathogens.Available from: https://www.ncbi.nlm.nih.gov/books/NBK535878/

(5) https://www.ncbi.nlm.nih.gov/books/NBK535877/

Excerpts from Chapter(6)-

"Biodefense in the Age of Synthetic Biology"

MODIFYING THE HUMAN IMMUNE SYSTEM

Human immunity is the bulwark for protection against infectious disease. Two basic systems respond to the vast array of threats in the natural environment. The first is the innate immune system, a collection of nonspecific protective mechanisms triggered by pathogen-associated molecular patterns, such as lipoteichoic acid from Gram-positive bacteria or unmethylated CpG sequences in viral DNA. The second is the adaptive immune system, which generates highly specific antibody and T-cell responses tailored to individual diseases and disease variants. Many natural pathogens manipulate the human immune system, both by suppressing the immune response (e.g., immunodeficiency viruses) and by upregulating certain responses (e.g., respiratory syncytial virus, which induces the immune system to favor a response involving Type 2 T helper cells [Th2] and subsequently increases the proclivity toward asthma [Lotz and Peebles, 2012]). These examples suggest that it may be feasible to develop a bioweapon capable of manipulating or "engineering" the immune response. Several potential forms for such a bioweapon were considered:

***Engineering immunodeficiency**. Manipulating a target population to have decreased immunity could increase the impact of a biological attack. This goal could be pursued either by manipulating a pathogen to simultaneously reduce immunity and cause disease (Jackson et al., 2001) or by separately introducing an immune-suppressing agent and a bioweapon into a target population. Agents used to cause immunodeficiency could be pathogens (e.g., the insidious spread of HIV [human immunodeficiency virus]) or chemicals (see NRC [1992] and IPCS [1996] for discussions of chemicals that contribute to immunotoxicity). It is also possible that a disease agent could be tailored to the immune state of a population, either by engineering the agent to avoid extant adaptive or innate immune barriers or by actually taking advantage of those barriers (for further discussion see Chapter 7, Health-Associated Data and Bioinformatics).*

Engineering hyperreactivity.

*The flip side of engineering immune deficiencies would be to attempt to cause immune hyperreactivity. Both pathogens and chemicals have been demonstrated to create a **cytokine storm**, a dangerous state that results from a positive feedback loop in the immune response. It may be possible to engineer an agent to purposefully trigger such a cascade. For example, some have suggested that the introduction of anthrax lethal toxin into a more benign disease vector could trigger a cytokine storm (Muehlbauer et al., 2007; Brojatsch et al., 2014; however, see Guichard et al., 2012 for a differing point of view). Similarly, the fact that there are already widespread responses in the human population to a limited number of well-known allergens (ACAAI, 2017) may provide a means of engineering biological threats that would trigger life-threatening IgE-mediated*

immune responses. The development and testing of new immunotherapies could also provide a roadmap for potentially engineering threats; for example, actors could learn from clinical studies in which anti-CD28 antibodies caused ***life-threatening cytokine storms*** *(Suntharalingam et al., 2006).* **[emphasis mine]**

Engineering autoimmunity.

Natural autoimmune diseases cause significant disability and death. It may be possible to engineer a disease that causes the body to turn on itself. Mouse models for the stimulation of autoimmunity now exist. For example, Experimental Autoimmune Encephalomyelitis, which mimics the symptoms of the human malady multiple sclerosis, has been induced in mice by immunization with antigens that cause an immune response (autoantigens; see Miller et al., 2007). Normally, such self-immunization is prevented by the mechanisms that ensure exclusion of antibodies and T-cells that are self-reactive, but some pathogens may present antigens that are similar enough to the body's own proteins that the original immune response spreads from the pathogen to the new human target. ***Research into checkpoint inhibitors, compounds designed to unleash the human immune system to eradicate tumors, could also potentially inform efforts to purposely engineer autoimmunity. By overstimulating the immune system, checkpoint inhibitors have been shown to lead to autoimmunity, often in the form of colitis (June et al., 2017). In addition, particular compounds have been shown to lead to an autoimmune disease of the liver (Tanaka et al., 2017, 2018). One potential route of attack could be to introduce such compounds via the microbiome.*** [emphasis mine]

(5) https://www.ncbi.nlm.nih.gov/books/NBK535877/

National Academies of Sciences, Engineering, and Medicine; Division on Earth and Life Studies; Board on Life Sciences; Board on Chemical Sciences and Technology; Committee on Strategies for Identifying and Addressing Potential Biodefense Vulnerabilities Posed by Synthetic Biology. Biodefense in the Age of Synthetic Biology. Washington (DC): National Academies Press (US); 2018 Jun 19. 6, Assessment of Concerns Related to Bioweapons that Alter the Human Host. Available from: https://www.ncbi.nlm.nih.gov/books/NBK535870/

MODIFYING THE HUMAN GENOME

In addition to using synthetic genes to impact human physiology through pathogens or modifications to the microbiome, it may also be possible to insert engineered genes directly into the human genome via horizontal transfer, in other words, to use "genes as weapons." Recent improvements in the ability to deliver genetic information via horizontal transfer, for example, through tools such as CRISPR/Cas9, potentially open the way for synthetic or cross-species transfer of genetic information into human hosts. In addition to protein-encoding genes, genes that encode RNA products such as short hairpin RNAs (shRNAs) or miRNAs could potentially be exploited as weapons in their own right. In combination with technologies for the modification of genes or their expression, deepening insights into systems biology could open new opportunities for causing diseases that are outside the rubric of the types of threats typically focused on in biodefense. Several ways in which synthetic biology approaches could be used to horizontally transfer genetic information to a human target to cause harm were considered:

- *While most gene delivery mechanisms would likely be facilitated by CRISPR elements, direct delivery of small RNAs via liposomes or other vehicles has proven possible in many cell types (Barton and Medzhitov, 2002; Wang et al., 2010; Miele et al., 2012), and more recently the delivery of entire messenger RNAs (mRNAs) has proven useful for vaccination and cellular reprogramming (Steinle et al., 2017). Naked RNA is generally considered to be fragile due its susceptibility to ribonuclease in the cell, and its delivery is largely confined to laboratory settings, but there are approaches for stabilizing RNAs (e.g., using liposomes, nanoparticles, synthetic polymers, cyclodextrins, ribonucleoproteins, and viral capsids ["armored" RNAs]) in use for many applications. RNA can be expressed from genes delivered as simple expression vectors, as low-fitness-burden cargoes on viral pathogens, or via CRISPR element insertion. One reason that RNA delivery is potentially a viable biological threat is that even a small initial skew in gene expression (such as the changes in gene expression normally caused by miRNAs) could greatly alter the probability of an initial cellular alteration. Even small amounts of a targeted RNA would not modify the genome per se, but might allow or encourage cells to begin the process of self-transformation to tumors, as evidenced by the fact that a large number of pro-oncogenic miRNAs have already been discovered (O'Bryan et al., 2017). In addition to RNAs produced by viruses, bacteria produce numerous small regulatory RNAs; introduction of these into the endogenous microbiome could lead to dysbiosis. Larger mRNAs can also be delivered via liposomes and nanoparticles or by RNA replication strategies being developed for vaccine production (see Chapter 8, Rapid Development of Self-Amplifying mRNA Vaccines); these methods could potentially beused to express deleterious cargo such as toxins or oncogenes, similar to threats related to DNA vectors.*

- ***CRISPR/Cas9. CRISPR elements can be harnessed for site-specific cleavage of genes, followed by homologous recombination via double-strand break repair or other mechanisms**. This technology has revolutionized genome engineering. The fact that DNA recognition can be programmed by simple modification of an RNA element makes precision targeting of genome change much easier than previous technologies such as zinc finger endonucleases and TAL effector nuclease (TALEN)–mediated sequence-specific recognition of DNA. Another advantage of CRISPR technology is its broad host range; **CRISPR elements are able to recognize and bind to DNA sequences in species other than those in which they originally evolved. Thus, the fact that gene editing technologies such as CRISPR make possible genomic changes in animal models that directly impact health and pathogenesis further implies that it may be possible to manipulate either germline or somatic cells to make such changes in humans. Significantly, the sequence specificity of CRISPR elements might also make possible ethnospecific targeting of gene-based weapons depending on the distributions of alleles (see also Chapter 7, Health-Associated Data and Bioinformatics). In terms of delivery, CRISPR elements could potentially be loaded onto a pathogen or delivered via the microbiome to modify human genomes in a way that would pose harm to individuals or populations.***

National Academies of Sciences, Engineering, and Medicine; Division on Earth and Life Studies; Board on Life Sciences; Board on Chemical Sciences and Technology; Committee on Strategies for Identifying and Addressing Potential Biodefense Vulnerabilities Posed by Synthetic Biology.

Biodefense in the Age of Synthetic Biology. Washington (DC): National Academies Press (US); 2018 Jun 19. 6, Assessment of Concerns Related to Bioweapons that Alter the Human Host. Available from: https://www.ncbi.nlm.nih.gov/books/NBK535870/

Blindly Following Makes it Easy to Be Manipulated By Those in Power.

During his 1947 Nuremberg Trial Göring Said The Following.

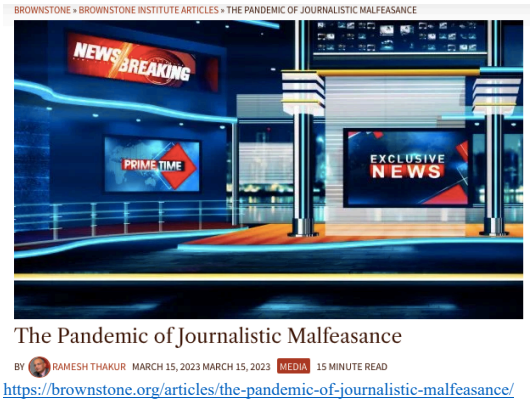
… it is the leaders of the country who determine the policy and it is always a simple matter to drag the people along, whether it is a democracy or a fascist dictatorship or a Parliament or a Communist dictatorship.

…voice or no voice, the people can always be brought to the bidding of the leaders. That is easy. *All you have to do is tell them they are being attacked and denounce the pacifists for lack of patriotism and exposing the country to danger.* It works the same way in any country.

"TO WHOM IT MAY CONCERN"

https://brownstone.org/articles/more-than-400-studies-on-the-failure-of-compulsory-covid-interventions/

https://brownstone.org/articles/debi-does-lockdowns/



https://brownstone.org/articles/the-pandemic-of-journalistic-malfeasance/

"TO WHOM IT MAY CONCERN"

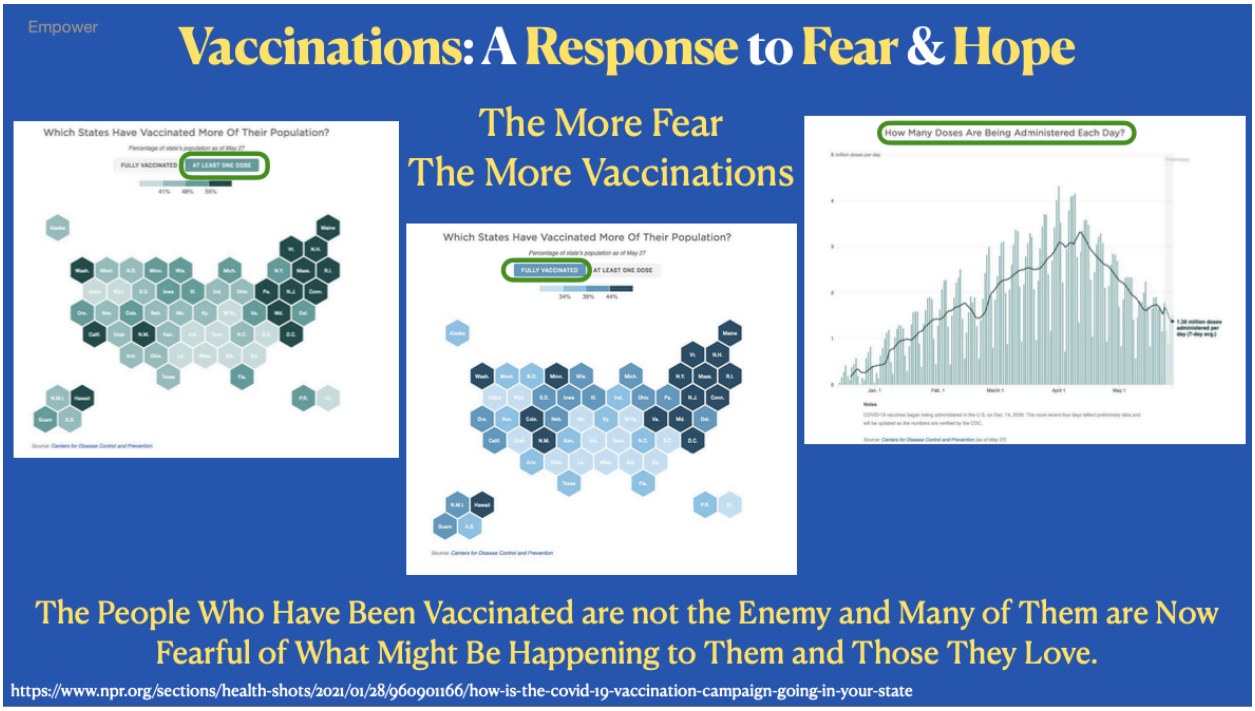
https://brownstone.org/articles/studies-and-articles-on-mask-ineffectiveness-and-harms/

https://brownstone.org/articles/how-dangerous-are-masks-for-children/

https://brownstone.org/articles/when-fauci-told-the-truth-about-masking/

https://brownstone.org/articles/why-masks-control-power-and-revenue/

"TO WHOM IT MAY CONCERN"



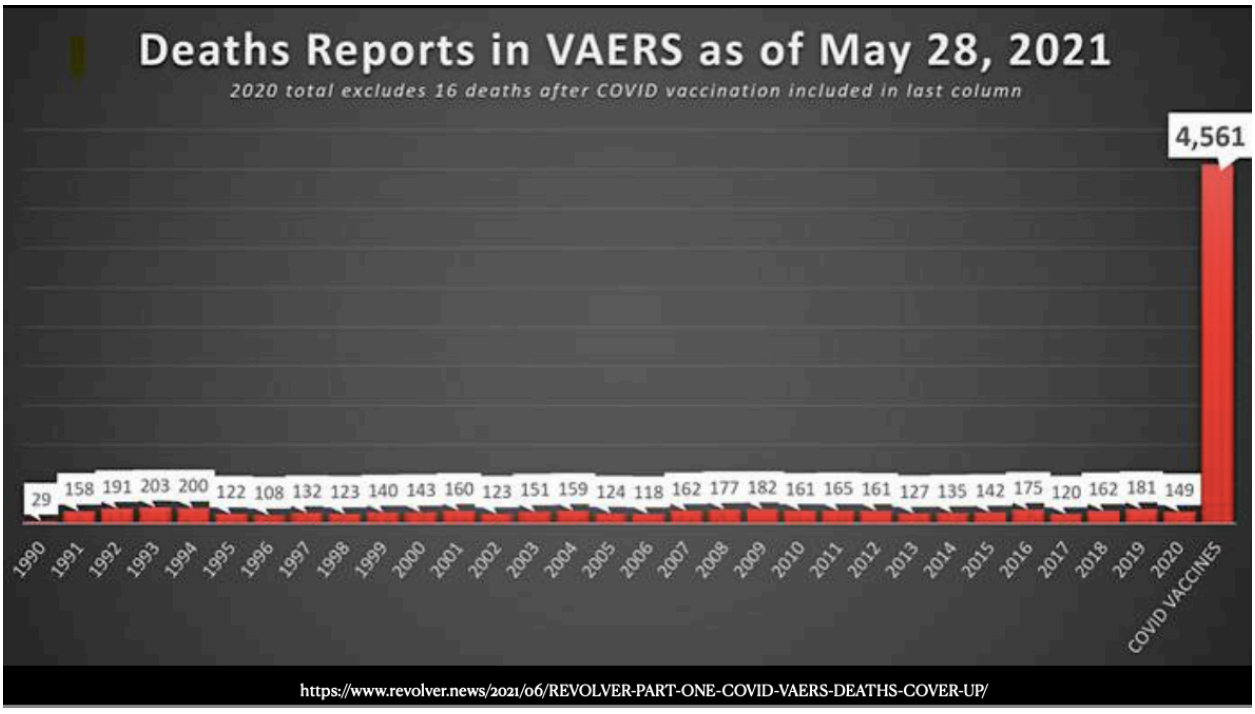
https://www.flemingmethod.com/documentation

Hope Shattered by Reality

https://vaers.hhs.gov/index.html

As of **19 April 2021** the Centers for Disease Control (CDC) reported on its Vaccine Adverse Event Reporting System (VAERS)	As of **23 April 2021** the Centers for Disease Control (CDC) reported on its Vaccine Adverse Event Reporting System (VAERS)	As of **7 May 2021** the Centers for Disease Control (CDC) reported on its Vaccine Adverse Event Reporting System (VAERS)
68,347 Adverse Events	118,902 Adverse Case Events	192,954 Adverse Case Events
Including	Including	Including
2,602 Deaths	3,544 Deaths	4,057 Deaths
8,285 Serious Injuries	12,619 Serious Injuries	17,190 Serious Injuries

https://www.lifesitenews.com/news/latest-vaers-data-show-reports-of-blood-clotting-disorders-after-all-three-emergency-use-authorization-vaccines
https://childrenshealthdefense.org/defender/vaers-significant-jump-reported-injuries-deaths-after-covid-vaccine/
https://childrenshealthdefense.org/defender/vaers-cdc-data-reported-deaths-covid-vaccines-kids-12-now-eligible/



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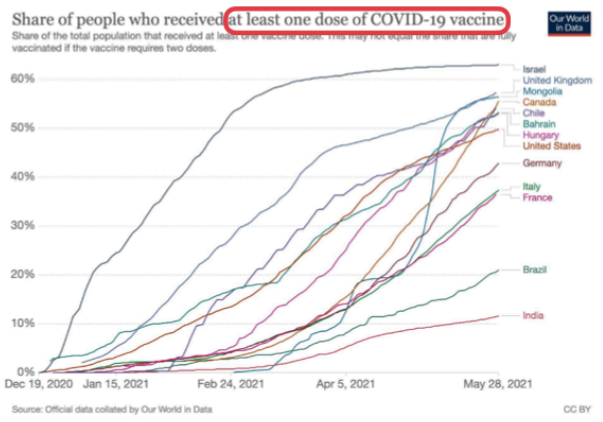
"TO WHOM IT MAY CONCERN"

Empower

European Database (EudraVigilance)

22 May 2021



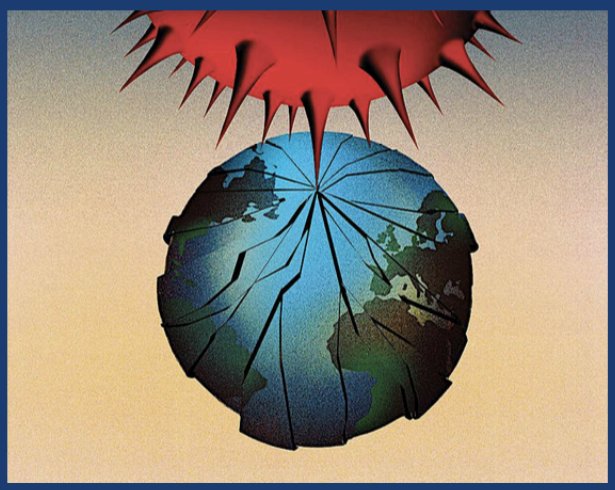
22 May 2021	Reported Cases	Deaths	All Multiple Symptoms	Serious Injuries
AstraZeneca	237,648	2,489	655,534	372,019
Pfizer BioNTech	191,215	5,961	452,779	186,308
Moderna	29,616	3,365	72,596	38,704
Janssen	4,997	369	15,281	7,713
Total	463,476	12,184	1,196,190	604,744

https://ourworldindata.org/covid-vaccinations

https://www.globalresearch.ca/12184-dead-1196190-injuries-europe

Empower

Crimes Against Humanity.



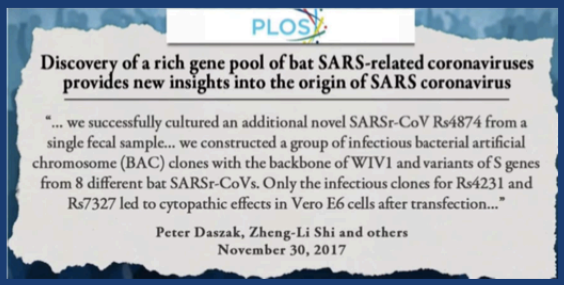
crime a·gainst hu·man·i·ty

noun

1. **a deliberate act, typically as part of a systematic campaign, that causes human suffering or death on a large scale:**

"he was handed over to the International Criminal Court in The Hague to face charges of crimes against humanity"

Powered by Oxford Dictionaries



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Immediate Call to Action Items - STOP:

(1) Gain-of-Function Research;

(2) Interference of Physician Treatment of Patients;

(3) Promotion and Coercion of Experimental Vaccines;

(4) Experimenting on People without Informed Consent; and

(5) Hold Those Responsible Criminally Accountable.

Empower

Violations of The Biological Weapons Convention (BWC) Treaty

The Biological Weapons Convention (BWC) At A Glance

FACT SHEETS & BRIEFS

Last Reviewed: March 2020

Contact: Daryl Kimball, *Executive Director*, (202) 463-8270 x107

The Biological Weapons Convention (BWC) is a legally binding treaty that outlaws biological arms. After being discussed and negotiated in the United Nations' disarmament forum starting in 1969, the BWC opened for signature on April 10, 1972, and entered into force on March 26, 1975. It currently has 183 states-parties, including Palestine, and four signatories (Egypt, Haiti, Somalia, Syria, and Tanzania). Ten states have neither signed nor ratified the BWC (Chad, Comoros, Djibouti, Eritrea, Israel, Kiribati, Micronesia, Namibia, South Sudan and Tuvalu).

Terms of the Treaty

The BWC bans:

- The development, stockpiling, acquisition, retention, and production of:
  1. Biological agents and toxins "of types and in quantities that have no justification for prophylactic, protective or other peaceful purposes;"
  2. Weapons, equipment, and delivery vehicles "designed to use such agents or toxins for hostile purposes or in armed conflict."
- The transfer of or assistance with acquiring the agents, toxins, weapons, equipment, and delivery vehicles described above.

The convention further requires states-parties to destroy or divert to peaceful purposes the "agents, toxins, weapons, equipment, and means of delivery" described above within nine months of the convention's entry into force. The BWC does not ban the use of biological and toxin weapons but reaffirms the 1925 Geneva Protocol, which prohibits such use. It also does not ban biodefense programs.

The BWC bans biological agents that have NO justification for prophylactic, protective or other "peaceful" purposes.

Seventh Review Conference

The seventh BWC review conference was held in December 2011. The Final Declaration document concluded that "under all circumstances the use of bacteriological (biological) and toxin weapons is effectively prohibited by the Convention and affirms the determination of States parties to condemn any use of biological agents or toxins other than for peaceful purposes, by anyone at any time."

"under all circumstances ... biological and toxic weapons ... effectively prohibited ... condemn any use...

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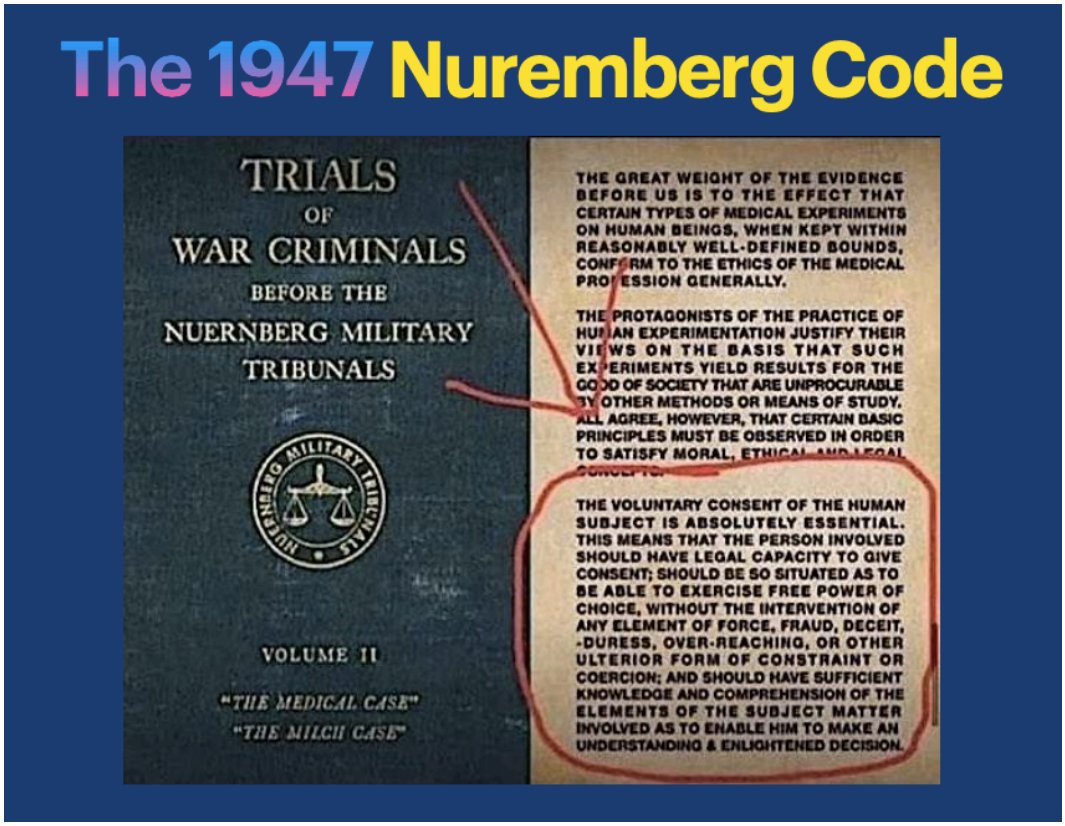
"TO WHOM IT MAY CONCERN"



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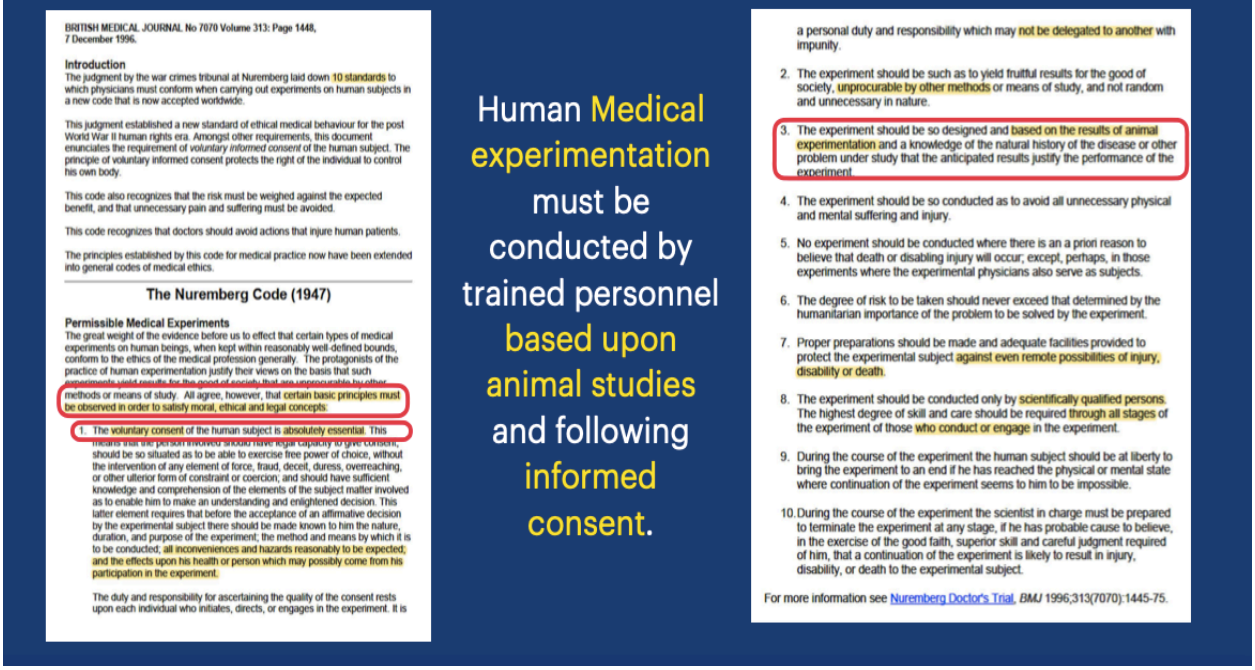

Violation Declaration of Helsinki

Established International **Research Ethics** June **1964** in Helsinki, Finland.

A Set of Ethical Principles for Conducting Human Research.

Article 8: Respect for Individual.

Articles 20, 21, 22: Informed Consent.

Article 27: Conflicts of Interest.

Articles 2, 3, 10: Investigators Duty is to Patient.

Article 11: Responsibility for Thorough Scientific Knowledge of Research.

Articles 16, 17: Careful Assessment of Risks & Benefits.

WORLD MEDICAL ASSOCIATION DECLARATION OF HELSINKI
Ethical Principles for Medical Research Involving Human Subjects

Adopted by the 18th WMA General Assembly, Helsinki, Finland, June 1964, and amended by the: 29th WMA General Assembly, Tokyo, Japan, October 1975
35th WMA General Assembly, Venice, Italy, October 1983
41st WMA General Assembly, Hong Kong, September 1989
48th WMA General Assembly, Somerset West, Republic of South Africa, October 1996 52nd WMA General Assembly, Edinburgh, Scotland, October 2000
53th WMA General Assembly, Washington 2002 (Note of Clarification on paragraph 29 added) 55th WMA General Assembly, Tokyo 2004 (Note of Clarification on Paragraph 30 added) 59th WMA General Assembly, Seoul, October 2008
64th WMA General Assembly, Fortaleza, Brazil, October 2013

Preamble

1. **The World Medical Association (WMA) has developed the Declaration of Helsinki as a statement of ethical principles for medical research involving human subjects, including research on identifiable human material and data.**

   The Declaration is intended to be read as a whole and each of its constituent paragraphs should be applied with consideration of all other relevant paragraphs.

2. **Consistent with the mandate of the WMA, the Declaration is addressed primarily to physicians. The WMA encourages others who are involved in medical research involving human subjects to adopt these principles.**

General Principles

3. The Declaration of Geneva of the WMA binds the physician with the words, "The health of my patient will be my first consideration," and the International Code of Medical Ethics declares that, "A physician shall act in the patient's best interest when providing medical care."

4. It is the duty of the physician to promote and safeguard the health, well-being and rights of patients, including those who are involved in medical research. The physician's knowledge and conscience are dedicated to the fulfilment of this duty.

5. Medical progress is based on research that ultimately must include studies involving human subjects.

6. The primary purpose of medical research involving human subjects is to understand the causes, development and effects of diseases and improve preventive, diagnostic and therapeutic interventions (methods, procedures and treatments). Even the best proven interventions must be evaluated continually through research for their safety, effectiveness, efficiency, accessibility and quality.

7. Medical research is subject to ethical standards that promote and ensure respect for all human subjects and protect their health and rights.

8. While the primary purpose of medical research is to generate new knowledge, this goal can never take precedence over the rights and interests of individual research subjects.

9. It is the duty of physicians who are involved in medical research to protect the life, health, dignity, integrity, right to self-determination, privacy, and confidentiality of personal information of research subjects. The responsibility for the protection of research subjects must always rest with the physician or other health care professionals and never with the research subjects, even though they have given consent.

10. Physicians must consider the ethical, legal and regulatory norms and standards for research involving human subjects in their own countries as well as applicable international norms and standards. No national or international ethical, legal or regulatory requirement should reduce or eliminate any of the protections for research subjects set forth in this Declaration.

11. Medical research should be conducted in a manner that minimises possible harm to the environment.

12. Medical research involving human subjects must be conducted only by individuals with the appropriate ethics and scientific education, training and qualifications. Research on patients or healthy volunteers requires the supervision of a competent and appropriately qualified physician or other health care professional.

13. Groups that are underrepresented in medical research should be provided appropriate access to participation in research.

14. Physicians who combine medical research with medical care should involve their patients in research only to the extent that this is justified by its potential preventive, diagnostic or therapeutic value and if the physician has good reason to believe that participation in the research study will not adversely affect the health of the patients who serve as research subjects.

15. Appropriate compensation and treatment for subjects who are harmed as a result of participating in research must be ensured.

Risks, Burdens and Benefits

16. In medical practice and in medical research, most interventions involve risks and burdens.

    Medical research involving human subjects may only be conducted if the importance of the objective outweighs the risks and burdens to the research subjects.

17. All medical research involving human subjects must be preceded by careful assessment of predictable risks and burdens to the individuals and groups involved in the research in

comparison with foreseeable benefits to them and to other individuals or groups affected by the condition under investigation.

Measures to minimise the risks must be implemented. The risks must be continuously monitored, assessed and documented by the researcher.

18. Physicians may not be involved in a research study involving human subjects unless they are confident that the risks have been adequately assessed and can be satisfactorily managed.

    When the risks are found to outweigh the potential benefits or when there is conclusive proof of definitive outcomes, physicians must assess whether to continue, modify or immediately stop the study.

Vulnerable Groups and Individuals

19. Some groups and individuals are particularly vulnerable and may have an increased likelihood of being wronged or of incurring additional harm.

    All vulnerable groups and individuals should receive specifically considered protection.

20. Medical research with a vulnerable group is only justified if the research is responsive to the health needs or priorities of this group and the research cannot be carried out in a non-vulnerable group. In addition, this group should stand to benefit from the knowledge, practices or interventions that result from the research.

Scientific Requirements and Research Protocols

21. Medical research involving human subjects must conform to generally accepted scientific principles, be based on a thorough knowledge of the scientific literature, other relevant sources of information, and adequate laboratory and, as appropriate, animal experimentation. The welfare of animals used for research must be respected.

22. The design and performance of each research study involving human subjects must be clearly described and justified in a research protocol.

The protocol should contain a statement of the ethical considerations involved and should indicate how the principles in this Declaration have been addressed. The protocol should include information regarding funding, sponsors, institutional affiliations, potential conflicts of interest, incentives for subjects and information regarding provisions for treating and/or compensating subjects who are harmed as a consequence of participation in the research study.

In clinical trials, the protocol must also describe appropriate arrangements for post-trial provisions.

Research Ethics Committees

23. The research protocol must be submitted for consideration, comment, guidance and approval to the concerned research ethics committee before the study begins. This committee must be transparent in its functioning, must be independent of the researcher, the sponsor and any other undue influence and must be duly qualified. It must take into consideration the laws and regulations of the country or countries in which the research is to be performed as well as applicable international norms and standards but these must not be allowed to reduce or eliminate any of the protections for research subjects set forth in this Declaration.

The committee must have the right to monitor ongoing studies. The researcher must provide monitoring information to the committee, especially information about any serious adverse events. No amendment to the protocol may be made without consideration and approval by the committee. After the end of the study, the researchers must submit a final report to the committee containing a summary of the study's findings and conclusions.

Privacy and Confidentiality

24. Every precaution must be taken to protect the privacy of research subjects and the confidentiality of their personal information

Informed Consent

25. Participation by individuals capable of giving informed consent as subjects in medical research must be voluntary. Although it may be appropriate to consult family members or community leaders, no individual capable of giving informed consent may be enrolled in a research study unless he or she freely agrees.
26. In medical research involving human subjects capable of giving informed consent, each potential subject must be adequately informed of the aims, methods, sources of funding, any possible conflicts of interest, institutional affiliations of the researcher, the anticipated benefits and potential risks of the study and the discomfort it may entail, post-study provisions and any other relevant aspects of the study. The potential subject must be informed of the right to refuse to participate in the study or to withdraw consent to participate at any time without reprisal. Special attention should be given to the specific information needs of individual potential subjects as well as to the methods used to deliver the information.

    After ensuring that the potential subject has understood the information, the physician or another appropriately qualified individual must then seek the potential subject's freely-given informed consent, preferably in writing. If the consent cannot be expressed in writing, the non-written consent must be formally documented and witnessed.

All medical research subjects should be given the option of being informed about the general outcome and results of the study.

27. When seeking informed consent for participation in a research study the physician must be particularly cautious if the potential subject is in a dependent relationship with the physician or may consent under duress. In such situations the informed consent must be sought by an appropriately qualified individual who is completely independent of this relationship.

28. For a potential research subject who is incapable of giving informed consent, the physician must seek informed consent from the legally authorised representative. These individuals must not be included in a research study that has no likelihood of benefit for them unless it is intended to promote the health of the group represented by the potential subject, the research cannot instead be performed with persons capable of providing informed consent, and the research entails only minimal risk and minimal burden.

29. When a potential research subject who is deemed incapable of giving informed consent is able to give assent to decisions about participation in research, the physician must seek that assent in addition to the consent of the legally authorised representative. The potential subject's dissent should be respected.

30. Research involving subjects who are physically or mentally incapable of giving consent, for example, unconscious patients, may be done only if the physical or mental condition that prevents giving informed consent is a necessary characteristic of the research group. In such circumstances the physician must seek informed consent from the legally authorised representative. If no such representative is available and if the research cannot be delayed, the study may proceed without informed consent provided that the specific reasons for involving subjects with a condition that renders them unable to give informed consent have been stated in the research protocol and the study has been approved by a research ethics committee. Consent to remain in the research must be obtained as soon as possible from the subject or a legally authorised representative.

31. The physician must fully inform the patient which aspects of their care are related to the research. The refusal of a patient to participate in a study or the patient's decision to withdraw from the study must never adversely affect the patient-physician relationship.

32. For medical research using identifiable human material or data, such as research on material or data contained in biobanks or similar repositories, physicians must seek informed consent for its collection, storage and/or reuse. There may be exceptional situations where consent would be impossible or impracticable to obtain for such research. In such situations the research may be done only after consideration and approval of a research ethics committee.

Use of Placebo

33. The benefits, risks, burdens and effectiveness of a new intervention must be tested against those of the best proven intervention(s), except in the following circumstances:

Where no proven intervention exists, the use of placebo, or no intervention, is acceptable; or

Where for compelling and scientifically sound methodological reasons the use of any intervention less effective than the best proven one, the use of placebo, or no intervention is necessary to determine the efficacy or safety of an intervention and the patients who receive any intervention less effective than the best proven one, placebo, or no intervention will not be subject to additional risks of serious or irreversible harm as a result of not receiving the best proven intervention.

Extreme care must be taken to avoid abuse of this option.

Post-Trial Provisions

34. In advance of a clinical trial, sponsors, researchers and host country governments should make provisions for post-trial access for all participants who still need an intervention identified as beneficial in the trial. This information must also be disclosed to participants during the informed consent process.

Research Registration and Publication and Dissemination of Results

35. Every research study involving human subjects must be registered in a publicly accessible database before recruitment of the first subject.

36. Researchers, authors, sponsors, editors and publishers all have ethical obligations with regard to the publication and dissemination of the results of research. Researchers have a duty to make publicly available the results of their research on human subjects and are accountable for the completeness and accuracy of their reports. All parties should adhere to accepted guidelines for ethical reporting. Negative and inconclusive as well as positive results must be published or otherwise made publicly available. Sources of funding, institutional affiliations and conflicts of interest must be declared in the publication. Reports of research not in accordance with the principles of this Declaration should not be accepted for publication.

Unproven Interventions in Clinical Practice

In the treatment of an individual patient, where proven interventions do not exist or other known interventions have been ineffective, the physician, after seeking expert advice, with informed consent from the patient or a legally authorised representative, may use an unproven intervention if in the physician's judgement it offers hope of saving life, re-establishing health or alleviating suffering. This intervention should subsequently be made the object of research, designed to evaluate its safety and efficacy. In all cases, new information must be recorded and, where appropriate, made publicly available.

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Unethical Human Experimentation in the U.S.

Numerous experiments which were performed on human test subjects in the United States are considered unethical, because they were illegally performed or they were performed without the knowledge, consent, or informed consent of the test subjects. Such tests were performed throughout American history, but most of them were performed during the 20th century. The experiments included the exposure of humans to many chemical and biological weapons (including infections with deadly or debilitating diseases), human radiation experiments, injections of toxic and radioactive chemicals, surgical experiments, interrogation and torture experiments, tests which involved mind-altering substances, and a wide variety of other experiments. Many of these tests were performed on children,[1] the sick, and mentally disabled individuals, often under the guise of "medical treatment". In many of the studies, a large portion of the subjects were poor, racial minorities, or prisoners.

Many of these experiments violated US law. Some others were sponsored by government agencies or rogue elements thereof, including the Centers for Disease Control, the United States military, and the Central Intelligence Agency, or they were sponsored by private corporations which were involved in military activities.[2][3][4] The human research programs were usually highly secretive and performed without the knowledge or authorization of Congress, and in many cases information about them was not released until many years after the studies had been performed.

The ethical, professional, and legal implications of this in the United States medical and scientific community were quite significant, and led to many institutions and policies that attempted to ensure that future human subject research in the United States would be ethical and legal. Public outrage in the late 20th century over the discovery of government experiments on human subjects led to numerous congressional investigations and hearings, including the Church Committee and Rockefeller Commission, both of 1975, and the 1994 Advisory Committee on Human Radiation Experiments, among others.

In 1987 the United States Supreme Court ruled in *United States v. Stanley*, 483 U.S. 669, that a U.S. serviceman who was given LSD without his consent, as part of military experiments, could not sue the U.S. Army for damages. Stanley was later awarded over $400,000 in 1996, two years after Congress passed a private claims bill in reaction to the case.[187] Dissenting the original verdict in *U.S. v. Stanley*, Justice Sandra Day O'Connor stated:

> No judicially crafted rule should insulate from liability the involuntary and unknowing human experimentation alleged to have occurred in this case. Indeed, as Justice Brennan observes, the United States played an instrumental role in the criminal prosecution of Nazi scientists who experimented with human subjects during the Second World War, and the standards that the Nuremberg Military Tribunals developed to judge the behavior of the defendants stated that the 'voluntary consent of the human subject is absolutely essential ... to satisfy moral, ethical, and legal concepts.' If this principle is violated, the very least that society can do is to see that the victims are compensated, as best they can be, by the perpetrators.

https://en.wikipedia.org/wiki/Unethical_human_experimentation_in_the_United_States

https://www.flemingmethod.com/documentation

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Violation of The International Covenant on Civil and Political Rights (ICCPR) Treaty on Human Experimentation.

International Covenant on Civil and Political Rights

Adopted and opened for signature, ratification and accession by General Assembly resolution 2200A (XXI) of 16 December 1966, entry into force 23 March 1976, in accordance with Article 49

Article 7

No one shall be subjected to torture or to cruel, inhuman or degrading treatment or punishment. In particular, no one shall be subjected without his free consent to medical or scientific experimentation.

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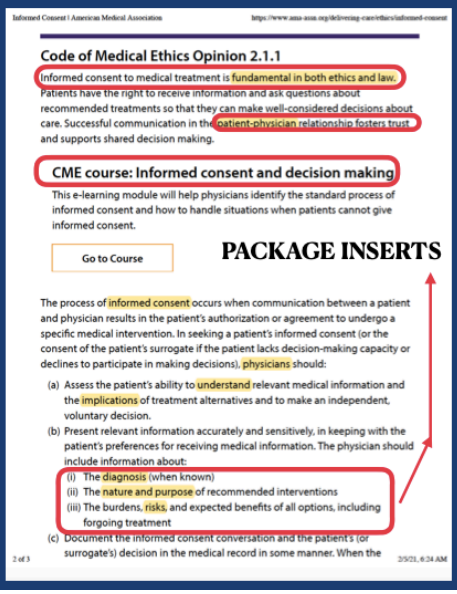
Physician Violation The American Medical Association (AMA) Code of Medical Ethics



Informed Consent | American Medical Association https://www.ama-assn.org/delivering-care/ethics/informed-consent

Code of Medical Ethics Opinion 2.1.1

Informed consent to medical treatment is fundamental in both ethics and law. Patients have the right to receive information and ask questions about recommended treatments so that they can make well-considered decisions about care. Successful communication in the patient-physician relationship fosters trust and supports shared decision making.

CME course: Informed consent and decision making

This e-learning module will help physicians identify the standard process of informed consent and how to handle situations when patients cannot give informed consent.

Go to Course

PACKAGE INSERTS

The process of informed consent occurs when communication between a patient and physician results in the patient's authorization or agreement to undergo a specific medical intervention. In seeking a patient's informed consent (or the consent of the patient's surrogate if the patient lacks decision-making capacity or declines to participate in making decisions), physicians should:

(a) Assess the patient's ability to understand relevant medical information and the implications of treatment alternatives and to make an independent, voluntary decision.

(b) Present relevant information accurately and sensitively, in keeping with the patient's preferences for receiving medical information. The physician should include information about:

(i) The diagnosis (when known)
(ii) The nature and purpose of recommended interventions
(iii) The burdens, risks, and expected benefits of all options, including forgoing treatment

(c) Document the informed consent conversation and the patient's (or surrogate's) decision in the medical record in some manner. When the

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Patient Informed Consent is Fundamental to both Medicine and Law.

Informed Consent is between the patient and physician.

Informed Consent requires patients being made aware of the purpose, risks & benefits of a test or treatment.

https://www.flemingmethod.com/documentation

"10 Fake News Tactics" - By Cory Lynn "CORY'S DIGS"

June 23, 2020 ***https://www.coreysdigs.com/global/10-fake-news-tactics/***

Fake news used to be a twist of truth, a spin on a story, and an outlandish opinion, but now it's become an in-your-face blatant lie, and they downright don't give a damn that you know they are lying. Now more than ever it is critical that people learn how to quickly sift through the garbage news and be able to discern and compartmentalize truth from fiction and plausibility. Corey's Digs provides over 80 resources for fact checking and deep digging, a file drawer loaded up with declassified documents and transcripts, tools including an excellent background search database, secure virtual private network when surfing the internet, and encrypted emails, as well as a two-part series on Hunting the Hunters providing tips on researching. Take advantage of this site and use all of these tools to keep yourself sharp during this information war, as they try to erase our history.

1) They write an article purely about data, throw out large numbers to scare you, but won't give you the minuscule percentage it equates to because they know most people won't bother to do the math. So instead, all people see is that big number. Then, they take an aspect within the overall data topic, that equates to a much larger percentage, and push that to the forefront to stoke fear, so it's the only percentage that sticks in ones mind. This is commonplace in fake news. Do the math yourself.

2) They write some dramatic piece to justify their narrative, throwing out numbers and percentages, then create a graph to reflect just how awful it appears to be. The only problem is, they only factored in about 2 out of 10 elements that would need to be taken into account to derive at the numbers they came to. They tell less than half the story, sum it up with a shocking visual, and people fall for it. Another thing they do with numbers is push a scare tactic with a global death rate attached to a year, but don't mention it's global, leading people to believe that is the death rate in the U.S. alone. They do this with the vaccine industry all the time. "Over 110,000 people died from the measles in 2017," with a big fat zero in the U.S., but they fail to mention that part.

3) They scribble out a 2,000 word spin on a story, beginning with an intriguing detail and perhaps a fact or two. Once they grip your mind, they go in for the kill – filling it with a pumped up opinion made to look like facts, while not providing a shred of evidence. About 3/4 of the way down the article, they lay out that basically everything they just stated was bs, in one single sentence, that about 5% of people will ever reach.

4) The emotionally driven articles meant to fuel anger, hate, or fear, that are typically backed with a bunch of false or exaggerated statistics, piped full of bought-off scientific research, or a personal story from a paid actor.

5) "Our sources say" is no longer a good look. Nine times out of ten it's either intentional leaked disinformation, someone with a grudge, or the sources are non-existent. Stick with journalists who provide evidence, unless you have followed a journalist's track record long enough to know that if they occasionally have an anonymous "source" and you are able to connect additional dots with evidence, keep it in the plausibility compartment until more information comes out.

6) Every single fact checking website out there is a joke. They are wrong more than they are right – and that's most certainly intentional.

7) The "drop retraction" and "the extraction." The "drop retraction" is the intentional drop of something so outlandish it becomes instant clickbait for a viral storm. They know it's an out and out lie, and they have every intention of doing the most damage followed by the most minimal retraction within 24-hrs of it going viral – just long enough to seed millions of minds, knowing full well that the mere tweet apology rather than removal of the piece or tweet entirely, will always remain in the clickbait spotlight. The "extraction" is when they extract a single sentence from a lengthy document few people will ever read, or 10 seconds from a 5 minute video clip few will bother to trace down, and spin it into a volatile mudslide of such disbelief, that everyone believes it. These are almost always emotionally driven segments.

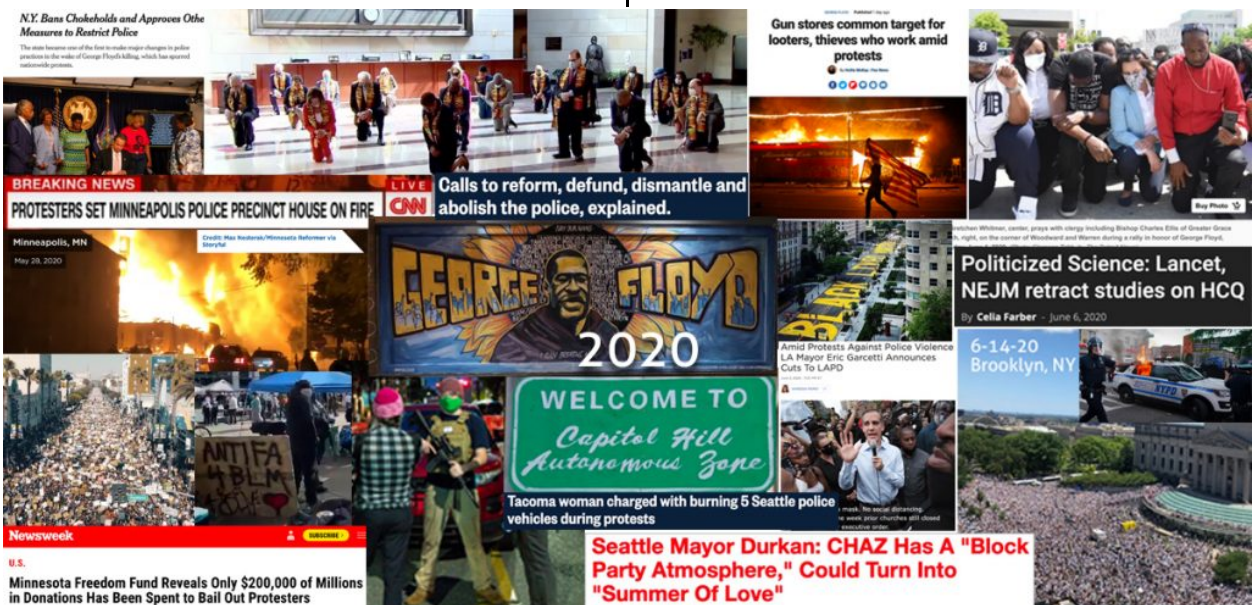
8) They stick with the same story or same statistics they've been pushing for a long time, even long after it's already been debunked with evidence to the contrary. There are millions of people in this world, so they cast their spells in cycles knowing full well it will grab hold of some minds.

9) "Misleading headlines" are some of the most infuriating ones of all. We are in a world of sound bites and eye candy, with information storming at 1000 mph and people with shorter attention spans than ever before. People will take a headline at face value, never read the article in its entirety, then proceed to share it with an opinion stapled to it. How can one have an opinion on something they never read? This is dangerous territory creating a lot of cognitive dissonance. CBS News recently ran a perfect example of this, with a prominent race baiting headline stating, "A white bar owner in Omaha shot and killed a black protester. He won't face charges." If anyone cared to click on it to read the actual story, the reality was it was a man battling another man who was shot in self defense, but they had to make it about race to stoke the racial divide and chaos. The New York Times is famous for altering headlines from their morning edition to their late edition. It generally begins with a shred of truth, and after receiving orders from the narrative machines, the headlines change to a totally different tone, expressing the complete opposite of how it was portrayed in the first edition.

10) The "two-sided dagger." When they write from a place of concern about a group of people, person, or situation, only later to stab them in the back for whatever political agenda they are taking part of at that point in time. Alternatively, they write in a certain tone about one situation or event, while writing in a

completely different tone about an almost identical situation or event. In either case, the two-side dagger becomes a nice side-by-side visual for evidence, but the damage has already been done.

https://www.coreysdigs.com/global/10-fake-news-tactics/



Some perfect examples of fake news and manipulation tactics can be seen all throughout Corey's Digs recent report: Historical Hypocrisy & Psychological Warfare which covers the past month of devastating actions and some of the most outrageous hypocrisy we've witnessed to date in an 111-page pictorial book with hyperlinks. It is also available in PDF download in The Bookshop. It's a historical scrapbook of evidence. Hang onto it.

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- *Run-up to the American bioterrorist State's Jan. 31, 2020 declaration of war - Part 2 (2018-2020)*
- *Timeline (1819-2022) of Supreme Court cases, related state cases and treatises*

Conclusion.

1. *God. "I am the Lord thy God; thou shalt not have strange gods before Me." Not power or social status. Not "the science." Not comfort or convenience. Not money. Not the World Health Organization, the World Economic Forum, the Bank for International Settlements, or the Club of Rome. Not David Rockefeller Jr., or Klaus Schwab, or Bill Gates, or Anthony Fauci.*
2. *Biological and chemical warfare acts are legally-distinct from pandemics. They fall under different international treaties. "Thou shalt not kill."*
3. *Fraud voids contracts, including implied 'informed consent' contracts and liability shields. "Thou shalt not bear false witness."*