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

March 6, 2023

To: Dr. Andrew Zywiec

and: Federal Bureau of Investigation

Re: Authorization to start criminal complaints

Dear Dr. Zywiec,

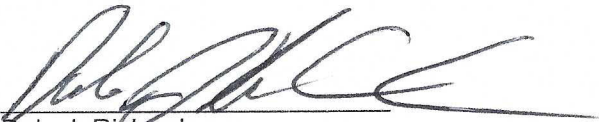
DSR Karis North Consulting Inc., a Delaware Corporation hereby authorizes you to transport this attached report "THE ENGINEERING OF BIOTERRORISM, CHILD TRAFFICKING, TREASON AND THE CRIME OF AGGRESSION UPDATE II" to the Federal Bureau of Investigation Field Office In Ohio and the State of New York and 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 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

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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.

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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

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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.

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(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.

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(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.

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- 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

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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—

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(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

U.S. Code

Notes

[prev](#) | [next](#)

(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—

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- (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, supervised release, 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

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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

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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

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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

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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,

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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

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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

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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

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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

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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.—

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(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

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(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

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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

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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—

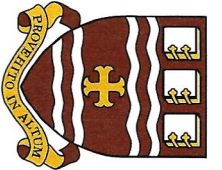
Shall be fined under this title or imprisoned not more than twenty years, or both, and shall be ineligible for employment by the United States or any department or agency thereof, for the five years next following his conviction.

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 _____ *Santhya*

President and Vice-Chancellor _____ *Kiana Timmons*

University Registrar (Interim) _____ *Jennifer Foster*



We, the duly authorized officers of Saskatchewan Polytechnic, hereby certify that

Dale J S Richardson

has fulfilled all the conditions prescribed to the

**DIPLOMA OF
MECHANICAL ENGINEERING TECHNOLOGY**



A handwritten signature in black ink, appearing to be 'R.' followed by a flourish.

PRESIDENT

May 31, 2019

A handwritten signature in black ink, appearing to be 'D. Smith'.

DEAN

A handwritten signature in black ink, appearing to be 'D. Leach'.

REGISTRAR

Proud Member Since *03/01/2018*

Member # *8350623*

Membership Certificate

Mr dale j richardson

has been granted the grade of
Student

and is entitled to all the rights and privileges as provided by the
Constitution and Bylaws of the Society.

As a member of ASHRAE Society, I comply with the ASHRAE Code of Ethics
(www.ashrae.org/codeofethics)



Secretary

[Signature]
JEFF H. LITTLETON

Incorporated New York 1895

President

[Signature]
FAROOQ MEHBOOB

ASET Member:

Dale James Richardson

Year : 2023

ID : 128964



THE ASSOCIATION OF SCIENCE
AND ENGINEERING TECHNOLOGY
PROFESSIONALS OF ALBERTA



This is to certify that
Dale J. Richardson # 202045
is recorded in this Association as
Associate



Registrant



Registrar

Exp. 12/31/2023



Shaping Tomorrow's
Built Environment Today

ASHRAE presents this Certificate of Appreciation to

Mr Dale J Richardson

in recognition of 5 years of membership

As a member since **March 1, 2018**, we appreciate your support and thank
you for your time and dedication to the industry

A handwritten signature in black ink, appearing to read "Farooq Mehboob". The signature is written in a cursive style with a horizontal line extending from the end of the name.

President _____

Farooq Mehboob

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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¹Yan Research – An Independent Research Team

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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 emergence¹; 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 nature⁴. However, the article and its central conclusion are now being challenged by scientists from all over the world⁵⁻¹⁵. 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-2¹⁸. 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)

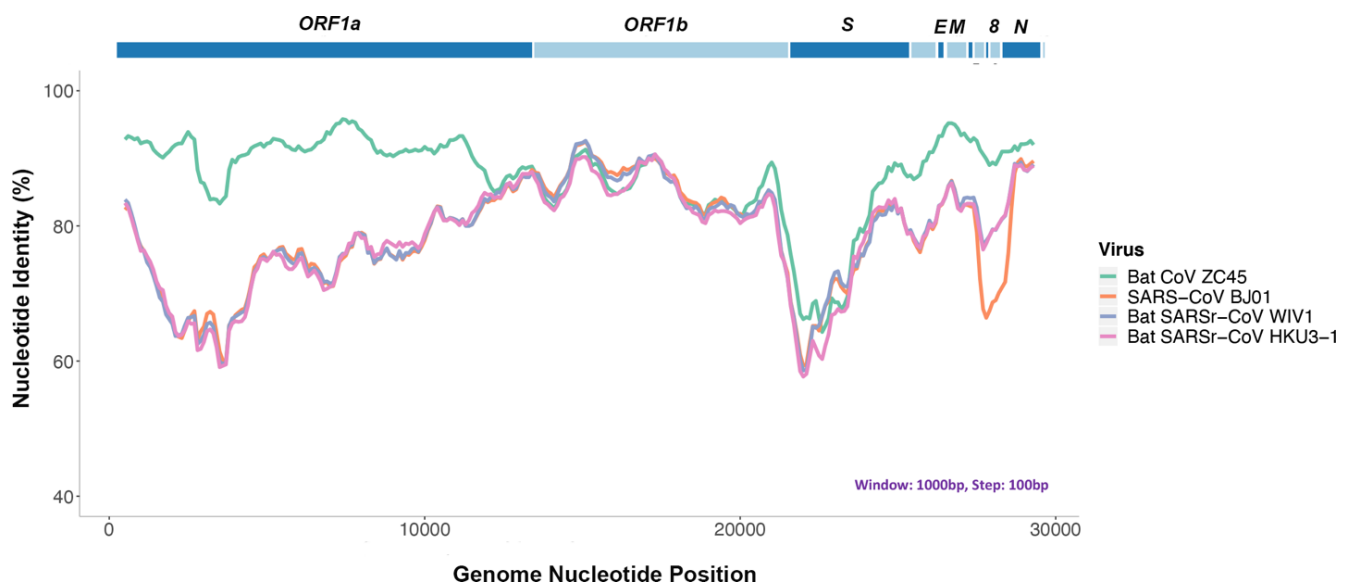


Figure 1. Genomic sequence analysis reveals that bat coronavirus ZC45 is the closest match to SARS-CoV-2. Top: genomic organization of SARS-CoV-2 (2019-nCoV WIV04). Bottom: similarity plot based on the full-length genome of 2019-nCoV WIV04. Full-length genomes of SARS-CoV BJ01, bat SARSr-CoV WIV1, bat 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-I²⁴. Normally, Orf8 is poorly conserved in coronaviruses²⁵. 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.

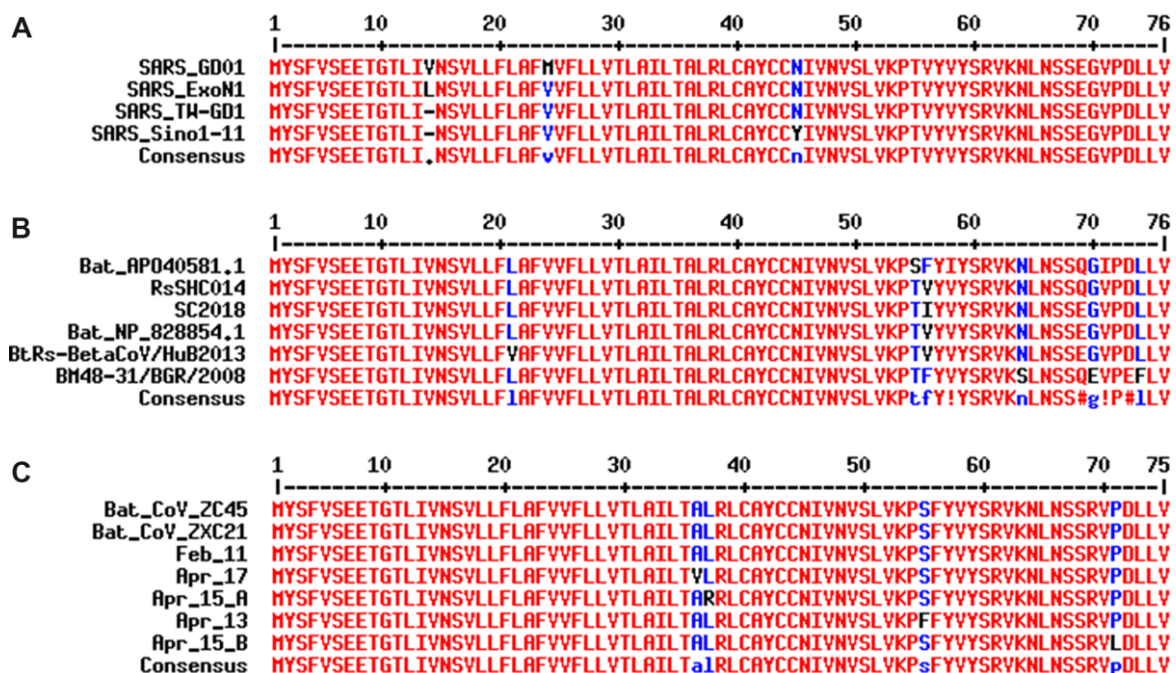


Figure 2. Sequence alignment of the E proteins from different β coronaviruses demonstrates the E protein's permissiveness and tendency toward amino acid mutations. A. Mutations have been observed in different strains of SARS-CoV. GenBank accession numbers: SARS_GD01: AY278489.2, SARS_ExoN1: ACB69908.1, 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 virion²⁶. 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 protein³². 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 virus¹⁸, 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 RaTG13³⁵, 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.

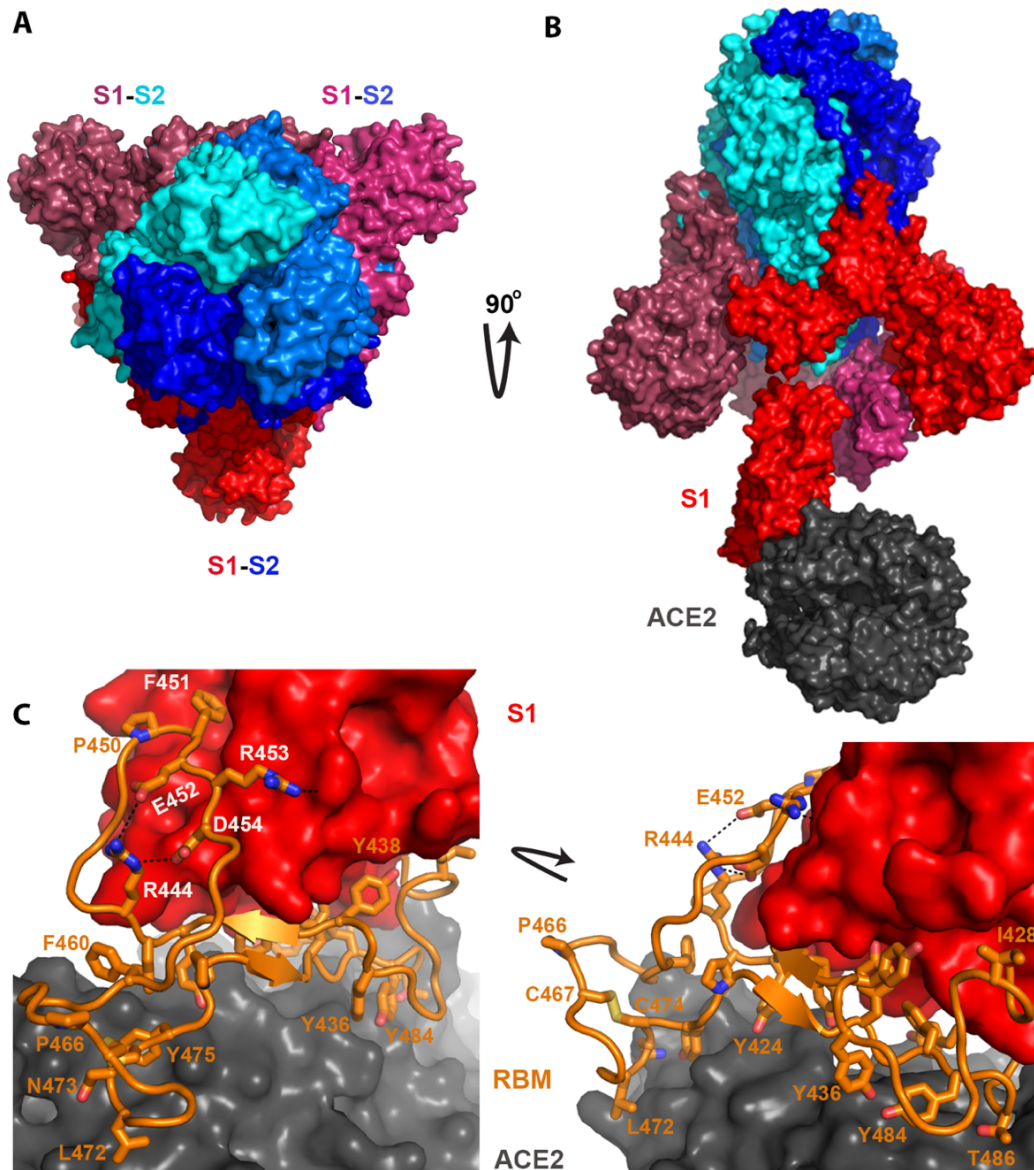


Figure 3. Structure of the SARS Spike protein and how it binds to the hACE2 receptor. Pictures were generated based on PDB ID: 6acj³⁷. A) Three spike proteins, each consisting of a S1 half and a S2 half, form a trimer. B) The S2 halves (shades of blue) are responsible for trimer formation, while the 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).

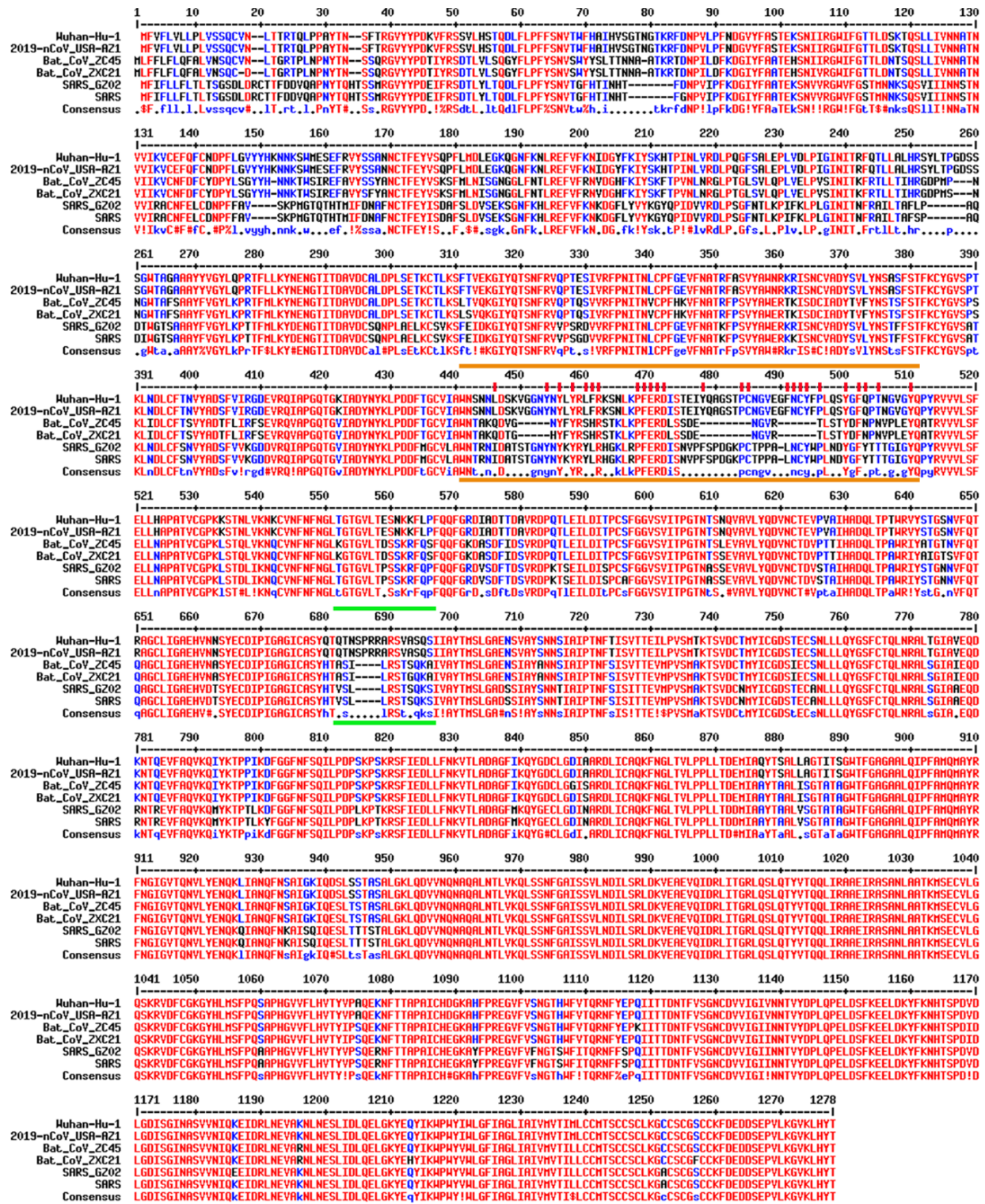


Figure 4. Sequence alignment of the spike proteins from relevant coronaviruses. Viruses being compared include SARS-CoV-2 (Wuhan-Hu-1: NC_045512, 2019-nCoV_USA-AZ1: MN997409), bat coronaviruses (Bat_CoV_ZC45: MG772933, Bat_CoV_ZXC21: MG772934), and SARS coronavirus (SARS_G202: AY390556, SARS: NC_004718.3). 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 hACE2²³. Recent structural work has confirmed our prediction³⁹.

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 adaptation 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 outbreak¹.

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 data⁴⁰⁻⁴². 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 2019⁴³. 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 ACE2², 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 did³. This last study virtually exempted all animals from their suspected roles as an intermediate host³, which is consistent with the observation that SARS-CoV-2 was well-adapted for humans from the start of the outbreak¹. 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 origin⁴⁴⁻⁴⁷.

Record also shows that research laboratories, for example, the Wuhan Institute of Virology (WIV), have successfully carried out such studies working with US researchers⁴⁵ and also working alone⁴⁷. 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 backbone³⁹. 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 segments⁴⁷.

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 outbreak⁴⁸.

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 publication³⁹, Dr. Fang Li, has been an active collaborator of Dr. Zhengli Shi since 2010⁴⁹⁻⁵³. Dr. Li was the first person in the world to have structurally elucidated the binding between SARS-CoV RBD and hACE2³⁸ 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.

Human SARS-CoV BJ01	655 - GICASYHTVSSL----RSTS - 670
Human SARS-CoV CUHK-W1	655 - GICASYHTVSSL----RSTS - 670
Human SARS-CoV Tor2	655 - GICASYHTVSSL----RSTS - 670
Human SARS-CoV Frankfurt-1	655 - GICASYHTVSSL----RSTS - 670
Human SARS-CoV Urbani	655 - GICASYHTVSSL----RSTS - 670
Civet SARS-CoV civet020	655 - GICASYHTVSSL----RSTS - 670
Civet SARS-CoV sz16	655 - GICASYHTVSSL----RSTS - 670
Raccoon 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 - GICASYHTASLL----RSTS - 661
Bat SARSr-CoV ZXC21	645 - GICASYHTASLL----RSTG - 660
Bat SARSr-CoV Rf4092	634 - GICASYHTASTL----RGVG - 649
Bat SARSr-CoV Rf/JL2012	636 - GICASYHTASLL----RSTG - 651
Bat SARSr-CoV JTM15	636 - GICASYHTASLL----RSTG - 651
Bat SARSr-CoV 16B0133	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

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 al⁵⁷.

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 coronaviruses⁵⁹⁻⁶⁵.

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 at⁶⁷, 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.

FauI

tat	cag	act	cag	act	aat	tct	cct	cgg	cgg	gca	cgt	agt	gta	gct	agt	caa	tcc	atc	att
Y	Q	T	Q	T	N	S	P	R	R	A	R	S	V	A	S	Q	S	I	I

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)₆GCGGG-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 2017⁷⁰. 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 coronavirus⁵⁹⁻⁶⁴. 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 virus⁷¹; 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 infections⁷⁴; 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.

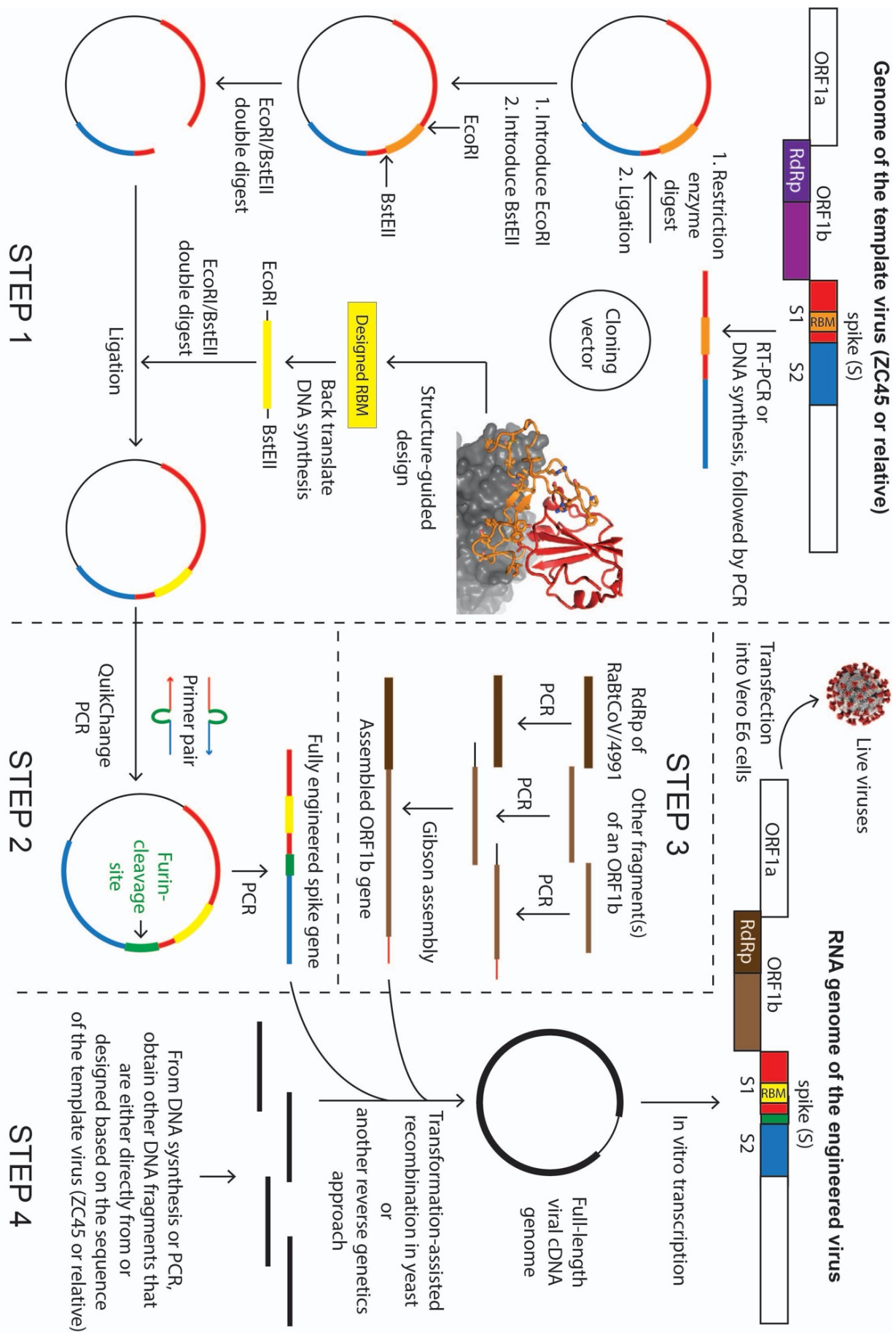


Figure 8. Diagram of a possible synthetic route of the laboratory-creation of SARS-CoV-2.

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 laboratories³³, 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 humans⁴⁴⁻⁴⁶.

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* segment⁸³, while neither its full genomic sequence nor virus isolation were ever reported. After amplifying the *RdRp* segment (or the whole *ORF1b* gene) of RaBtCoV/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* segment⁸³. This RaTG13 virus could then be claimed to have been discovered back in 2013.

2. The RdRp protein from RaBtCoV/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, *Remdesivir*, 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 2008⁴⁴, 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 *RBM*s 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 *RBM*s, 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 PCR⁶⁰, overlap PCR followed by restriction enzyme digestion and ligation⁹¹, 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/4991⁸³. 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 week⁹⁷. 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 past⁶⁷, 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 animals¹⁰¹. 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 years¹⁰²⁻¹⁰⁴.

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 stabilized¹⁰¹. 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 transmissibility¹⁰⁵⁻¹⁰⁸.

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 attenuated¹⁰⁹⁻¹¹¹. 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 genome⁴. 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 (RaTG13¹⁸, RmYN02³⁰, 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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U.S. Criminal Complaints

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 cost¹ and has had very little impact on the transmission of COVID². 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 virus³. 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 tract⁴ and inducing the production of IgA⁵, 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 delay⁶
- 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 development⁷
- 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 immunity⁸, 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 changing⁹. 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>



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
signed above. SUE ZANN JOHNSON
Notary Public

[Handwritten signature] 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 unconstitutional¹⁰, poorly researched, did not go through appropriate clinical trials¹¹, 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 tissue¹², increased clotting profiles¹³, and even neurological damage¹⁴ 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/>
⁹ <https://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>

Andrew Zywiec

On 17th of February 2023, ANDREW ZYWIEC appeared before me, provided identification and signed above. Andrew ZYWIEC

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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/>
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.

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

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          SK462
AACACAGTGG GGGGACATCA AGCAGCCATG CAAATGTTAA AAGAGACCAT 50
CAATGAGGAA GCTGCAGAAT GGGATAGATT GCATCCAGTC CATGGAGGGC 100
          SK431
CTATTGCACC AGGCCAGATG AGAGAACCAA GGGGAAGTGA CATAGCAGGA 150
ACTACTAGTA CCCTTCAGGA AC 172

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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 ³²P 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 bacterio-

phage, 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 MgCl₂ 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).

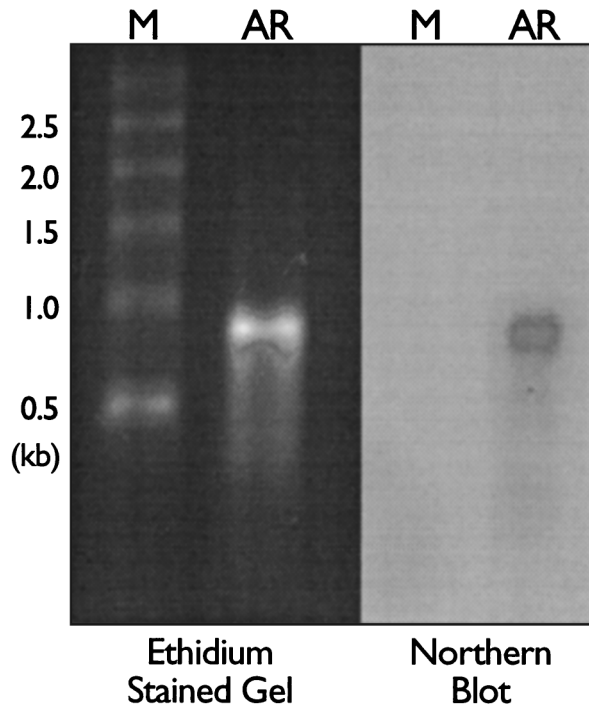


FIG. 2. Characterization of the recombinant RNA packaged in AR-HIV-B. reRNA was isolated from AR-HIV-B, fractionated in a denaturing 1% agarose gel, stained with ethidium bromide, and detected by UV fluorescence. The reRNA was transferred to a membrane and probed with a ³²P-labeled oligonucleotide to 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 MgCl₂ (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

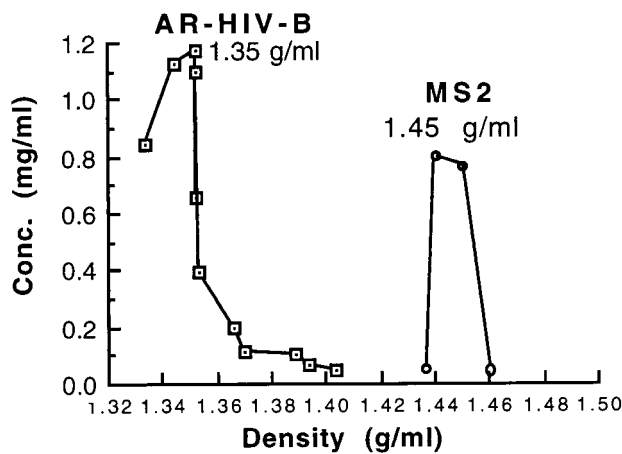


FIG. 3. Densities of AR-HIV-B and bacteriophage MS2 particles. MS2 and AR-HIV-B were loaded in separate gradients and centrifuged, and then 0.5-ml fractions were collected and weighed to determine the density of the CsCl. The optical density of each fraction at 260 nm was measured to calculate the Armored RNA and MS2 concentrations.

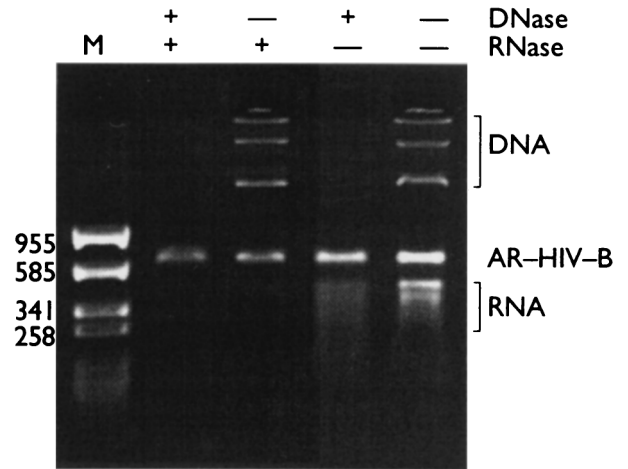


FIG. 4. Resistance of purified Armored RNA particles to nucleases. The particles were mixed with plasmid DNA and purified, naked reRNA. The mixture of plasmid DNA, reRNA, and intact Armored RNA was incubated with DNase I and/or the RNases at 37°C for 1 h, fractionated by gel electrophoresis in a 2.0% nondenaturing agarose gel, and detected by ethidium bromide staining and UV fluorescence. The numbers on the left are in base pairs.

for reRNA copy number. At concentrations below 0.05 mg/ml, the reRNA copy number of the AR-HIV decreased (data not shown).

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.

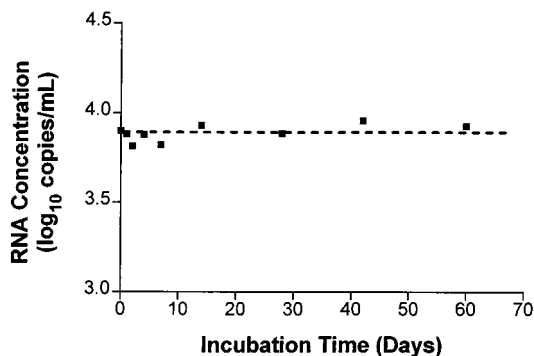


FIG. 5. Stability study of AR-HIV-B spiked into EDTA-anticoagulated human plasma at 4°C. AR-HIV-B was added to clarified plasma to a final concentration of ~7,500 copies/ml. Samples were incubated at 4°C for 0, 1, 2, 4, 7, 14, 28, 42, and 60 days. Samples from each time point were assayed in duplicate, 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

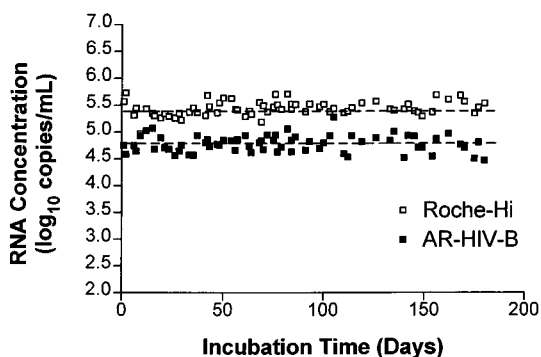


FIG. 6. Comparison of Armored RNA positive control and the HIV-1 Monitor assay high-positive control (Roche-Hi) used in a clinical setting over 180 days. AR-HIV-B was added to clarified EDTA-anticoagulated plasma to a final concentration of ~65,000 copies/ml, aliquoted into 0.2-ml samples, and stored 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.

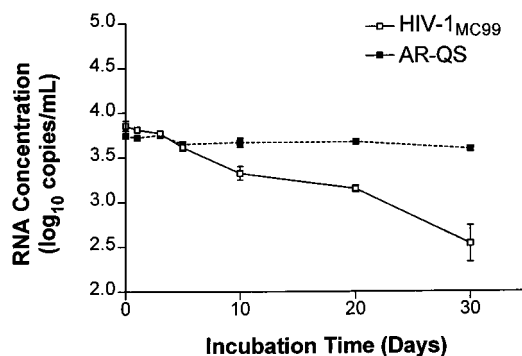


FIG. 7. Stability of Armored RNA and HIV coincubated in normal human plasma. AR-QS and HIV-1_{MC99} were coincubated in normal human plasma over 30 days at 37°C. The concentrations of the QS and HIV RNA sequences were determined by the HIV-1 Monitor assay.

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).

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

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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
[Page 3 of 3]
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.**

Appendix (1) - addition to Statement of LISA M. AULERICH, RN

For RCMP FILE #2023-59269, 2023-59284

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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 29, 2023*

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Why N95 Masks Fail to Stop the Spread

BY  MEGAN MANSELL JANUARY 24, 2023 MASKS 19 MINUTE READ

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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.

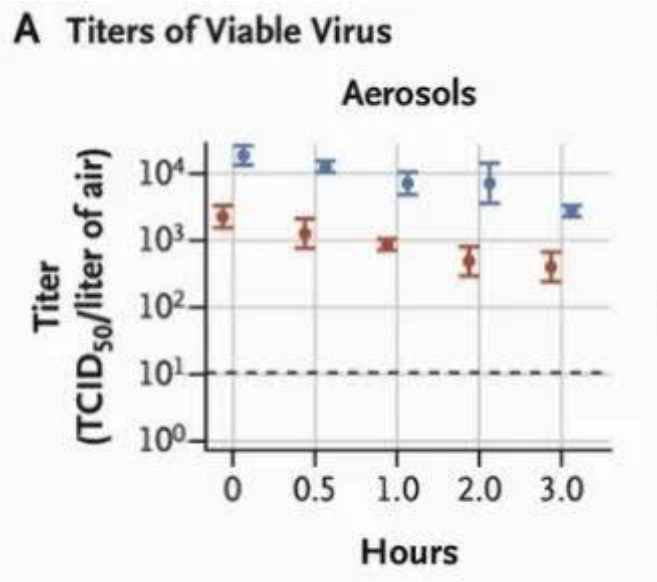
Here, we look at the output, particle- to- PFU ratio, and MID for SARS-CoV-2, versus the hypothetical perfect capture capacity for N95s, to demonstrate that even with a perfect rate of capture (and in this case, of matter far smaller than the apparatus is approved or designed to capture), the 5% percent 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 $10^{2.7}$ TCID₅₀ per liter of air.”

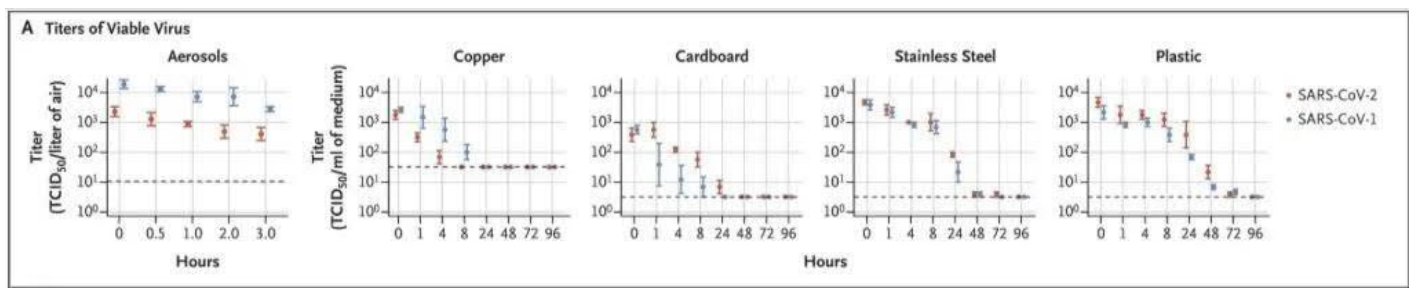
This study used lab-generated aerosols containing infectious SARS-CoV-2, and observed viability of emitted matter on different surfaces and as aerosols over time.



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?

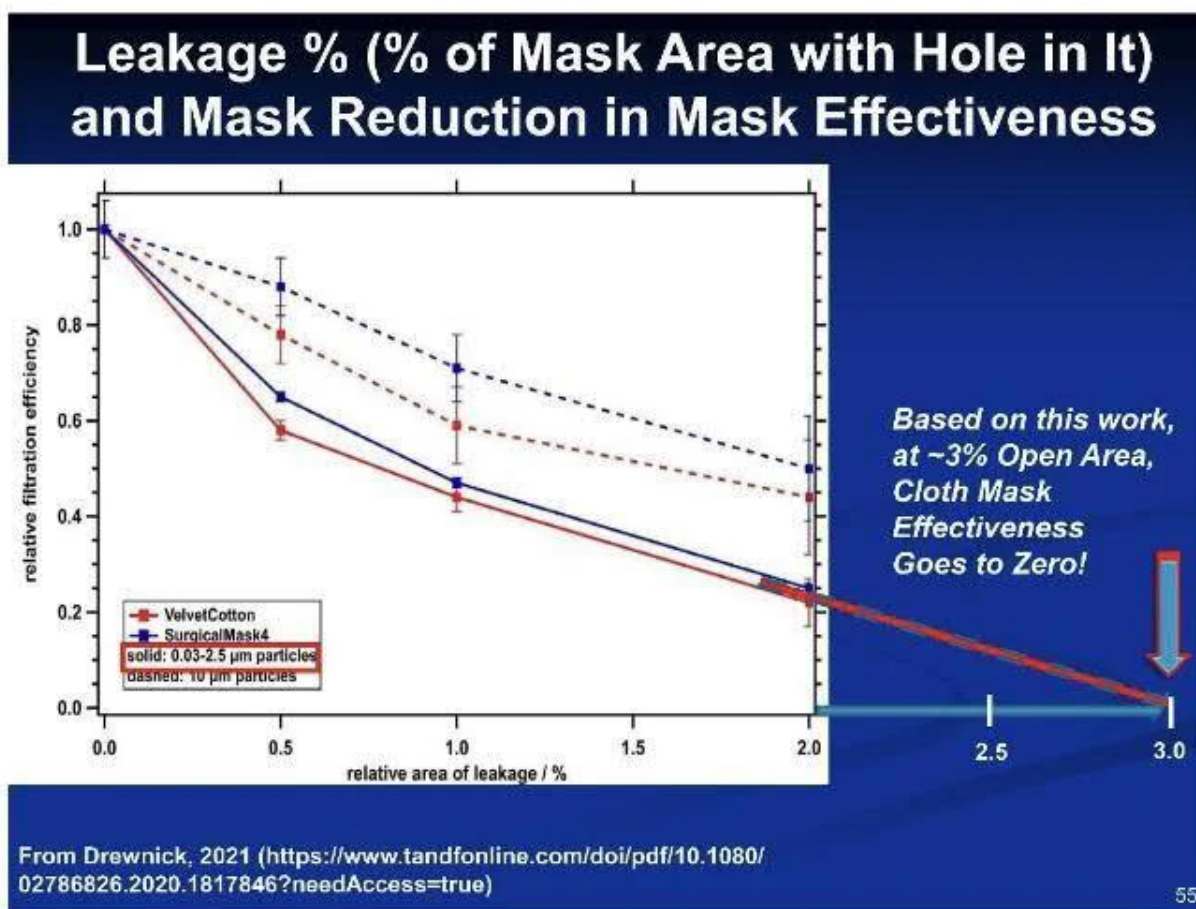


Aerosol viability rates are important because they demonstrate the capacity for transmission in enclosed spaces without a transmissible individual present. *With* a transmissible individual present and emitting into the given space, output would be a constant, and viable viral matter would increase atmospheric 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: $<0.3 \mu\text{m}$, $0.3\text{--}0.5 \mu\text{m}$, and $>0.5\text{--}5.0 \mu\text{m}$. 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 ($<0.3 \mu\text{m}$). Especially for the COVID-positive group, increases in total aerosol concentration were dominated by increases in particles $\leq 0.3 \mu\text{m}$.”

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.”

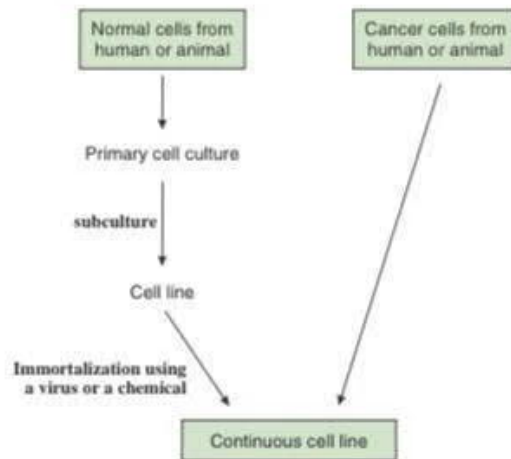


Figure 2.2 Derivation of continuous cell lines of human and animal cells. Most types of cell taken from the body do not grow well in culture. If cells from a primary culture can be subcultured they are growing as a cell line. They can be subcultured only a finite number of times unless they are immortalized, 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 \times $60 \text{ min} \times 2.5 \text{ h} = 330$.”

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 ID₅₀** for seasonal coronavirus subtype 229E that causes mild common cold in humans was reported to be 13 TCID₅₀.”

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 $<0.3 \mu\text{m}$, and we are discussing a pathogen which has a minimum viable particle size of $0.06\text{-}0.14 \mu\text{m}$.

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 ($100,000 \times 60$ minutes). An 8- hour period in an enclosed space equates to 48 million virions emitted ($100,000 \times 480$ 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 lone- 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.



Megan Mansell

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Analysis of the Virus SARS-CoV-2 as a Potential Bioweapon in Light of International Literature

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COL László Földi, Prof PhD[‡]

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

Valencac 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.

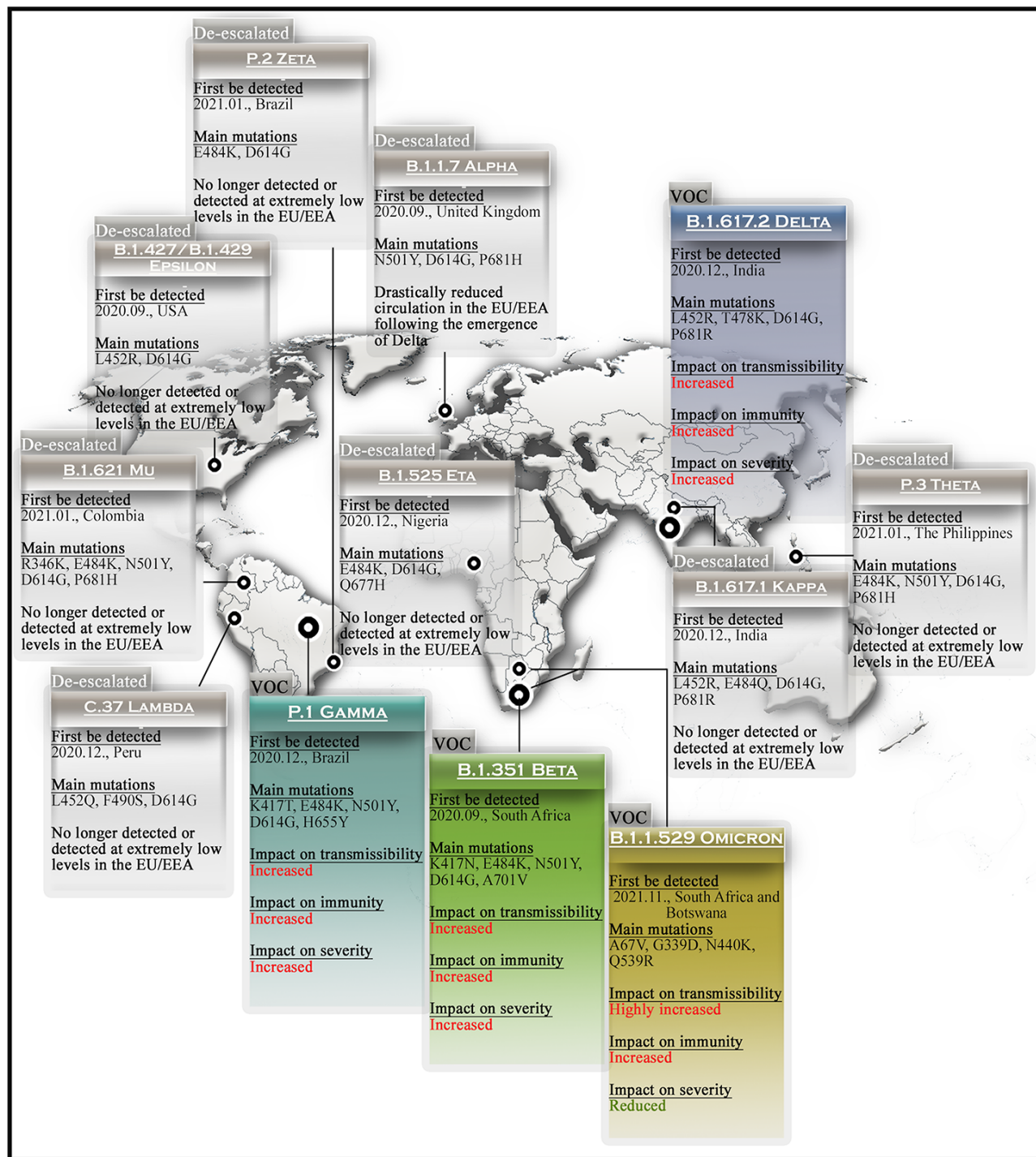
In line with the above statements, a recent—not yet peer-reviewed—Hong Kong study found genetic evidence that Syrian hamsters (*Mesocricetus auratus*) kept in a local pet shop were responsible for a coronavirus disease 2019 (COVID-19) outbreak, which has so far infected at least five people.¹⁷

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



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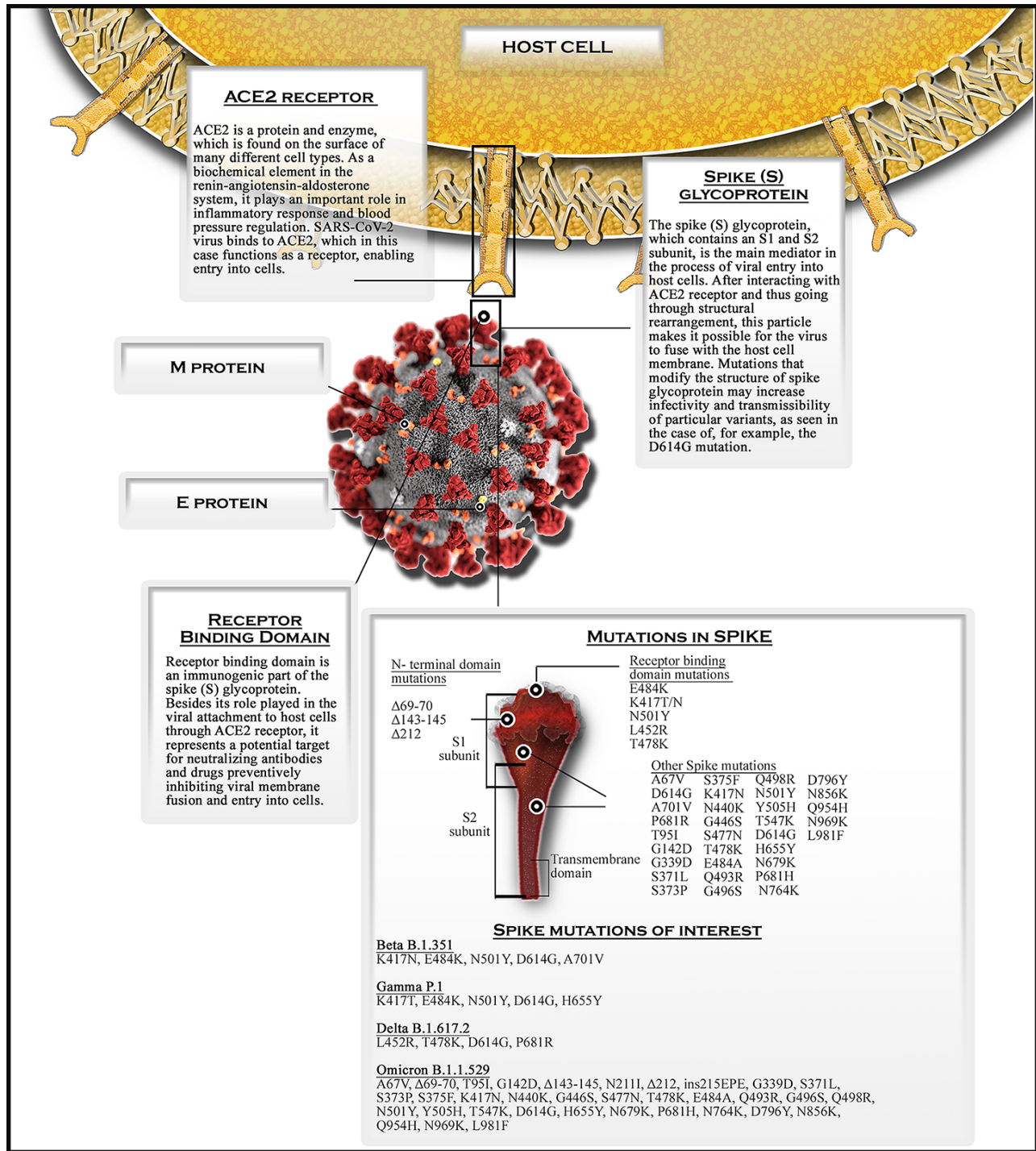
FIGURE 1. Variants of concern and de-escalated variants of SARS-CoV-2; note that VOCs according to the U.S. government SARS-CoV-2 Interagency Group classification are Delta (B.1.617.2 and AY lineages) and Omicron (B.1.1.529 and BA lineages), while Beta (B.1.351), Gamma (P.1), Delta (B.1.617.2 and AY 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



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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-2²¹

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

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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 toolbox 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. 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.rainet.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.dignitydk.com/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 mds 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
SafeCom Training Services Inc.
Edmonton, AB
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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.

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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

U.S. Criminal Complaints

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

U.S. Criminal Complaints

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 that COVID-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) [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 IrNPI 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](#), Shlomain, 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 counterfactual. 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 illusory 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 Laroche Lambert, 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 underestimate 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 Nordtrade.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 toolbox 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 disproportionately 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.”
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- 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.”
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- 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.”
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- 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.”
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- 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.”
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- 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.”
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- 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.”
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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 metronariston, 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,
MehI-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.”

<p>31) <u>Role of children in the transmission of the COVID-19 pandemic: a rapid scoping review</u>, Rajmil, 2020</p>	<p>“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.”</p>
<p>32) <u>COVID-19 in schools – the experience in NSW</u>, NCIRS, 2020</p>	<p>“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.”</p>
<p>33) <u>Spread of SARS-CoV-2 in the Icelandic Population</u>, Gudbjartsson, 2020</p>	<p>“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.”</p>
<p>34) <u>Case-Fatality Rate and Characteristics of Patients Dying in Relation to COVID-19 in Italy</u>, Onder, 2020</p>	<p>Infected children and females were less likely to have severe disease.</p>
<p>35) <u>BC Center for Disease Control</u>, BC Children’s hospital, 2020</p>	<p>“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.”</p>
<p>36) <u>Transmission of SARS-CoV-2 in Australian educational settings: a prospective cohort study</u>, Macartney, 2020</p>	<p>“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.”</p>
<p>37) <u>COVID-19 Cases and Transmission in 17 K–12 Schools — Wood County, Wisconsin, August 31–November 29, 2020</u>, CDC/Falk, 2021</p>	<p>“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.”</p>

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) <u>The Dangers of Keeping the Schools Closed</u> , 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) <u>SARS-CoV-2 Infection in Children</u> , Lu, 2020	“In contrast with infected adults, most infected children appear to have a milder clinical course. Asymptomatic infections were not uncommon.”
43) <u>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</u> , Wu, 2020	Less than 1% of the cases were in children younger than 10 years of age.
44) <u>Risk for COVID-19 Infection</u> , CDC, 2021	A <u>CDC report</u> 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) <u>Children are unlikely to have been the primary source of household SARS-CoV-2 infections</u> , 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) <u>Characteristics of Household Transmission of COVID-19</u> , Li, 2020	“The secondary attack rate to children was 4% compared with 17.1% for adults.”
47) <u>Are The Risks Of Reopening Schools Exaggerated?</u> , 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 <u>negative impacts</u> 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, <u>hunger</u> , 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) <u>Child care not associated with spread of COVID-19, Yale study finds</u> , 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.”

<p>59) <u>COVID-19 Transmission and Children: The Child Is Not to Blame</u>, Lee, 2020</p>	<p>“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.”</p>
<p>60) <u>Role of children in household transmission of COVID-19</u>, Kim, 2020</p>	<p>“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%).”</p>
<p>61) <u>Secondary attack rate in household contacts of COVID-19 Paediatric index cases: a study from Western India</u>, Shah, 2021</p>	<p>“The household SAR from pediatric patients is low.”</p>
<p>62) <u>Household Transmission of SARS-CoV-2: A Systematic Review and Meta-analysis</u>, Madewell, 2021</p>	<p>“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%).”</p>
<p>63) <u>Children and Adolescents With SARS-CoV-2 Infection</u>, Maltezou, 2020</p>	<p>“Child-to-adult transmission was found in one occasion only.”</p>
<p>64) <u>Severe Acute Respiratory Syndrome-Coronavirus-2 Transmission in an Urban Community: The Role of Children and Household Contacts</u>, Pitman-Hunt, 2021</p>	<p>“A household sick contact was identified in fewer than half (42%) of patients and no child-to-adult transmission was identified.”</p>

65) <u>A Meta-analysis on the Role of Children in Severe Acute Respiratory Syndrome Coronavirus 2 in Household Transmission Clusters</u> , 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) <u>The role of children in transmission of SARS-CoV-2: A rapid review</u> , Li, 2020	“Preliminary results from population-based and school-based studies suggest that children may be less frequently infected or infect others.”
67) <u>Novel Coronavirus 2019 Transmission Risk in Educational Settings</u> , 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) <u>INTERPOL report highlights impact of COVID-19 on child sexual abuse</u> , 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) <u>Do school closures reduce community transmission of COVID-19? A systematic review of observational studies</u> , Walsh, 2021	“With such varied evidence on effectiveness, and the harmful effects, policymakers should take a measured approach before implementing school closures.”
70) <u>Association between living with children and outcomes from COVID-19: an OpenSAFELY cohort study of 12 million adults in England</u> , 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) <u>School closure and management practices during coronavirus outbreaks including COVID-19: a rapid systematic review</u> , 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) <u>Non-pharmaceutical public health measures for mitigating the risk and impact of epidemic and pandemic influenza</u> , 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.”

<p>10) <u>Effectiveness of personal protective measures in reducing pandemic influenza transmission: A systematic review and meta-analysis</u>, Saunders-Hastings, 2017</p>	<p>“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.”</p>
<p>11) <u>Experimental investigation of indoor aerosol dispersion and accumulation in the context of COVID-19: Effects of masks and ventilation</u>, Shah, 2021</p>	<p>“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.”</p>
<p>12) <u>Exercise with facemask; Are we handling a devil’s sword?- A physiological hypothesis</u>, Chandrasekaran, 2020</p>	<p>“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.”</p>
<p>13) <u>Surgical face masks in modern operating rooms—a costly and unnecessary ritual?</u>, Mitchell, 1991</p>	<p>“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.”</p>
<p>14) <u>Facemask against viral respiratory infections among Hajj pilgrims: A challenging cluster-randomized trial</u>, Alfelali, 2020</p>	<p>“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, $p = 0.40$).”</p>
<p>15) <u>Simple respiratory protection—evaluation of the filtration performance of cloth masks and common fabric materials against 20-1000 nm size particles</u>, Rengasamy, 2010</p>	<p>“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.”</p>
<p>16) <u>Respiratory performance offered by N95 respirators and surgical masks: human subject evaluation with NaCl aerosol representing bacterial and viral particle size range</u>, Lee, 2008</p>	<p>“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.”</p>
<p>17) <u>Aerosol penetration and leakage characteristics of masks used in the health care industry</u>, Weber, 1993</p>	<p>“We conclude that the protection provided by surgical masks may be insufficient in environments containing potentially hazardous sub-micrometer-sized aerosols.”</p>

<p>18) <u>Disposable surgical face masks for preventing surgical wound infection in clean surgery</u>, Vincent, 2016</p>	<p>“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.”</p>
<p>19) <u>Disposable surgical face masks: a systematic review</u>, Lipp, 2005</p>	<p>“From the limited results it is unclear whether wearing surgical face masks results in any harm or benefit to the patient undergoing clean surgery.”</p>
<p>20) <u>Comparison of the Filter Efficiency of Medical Nonwoven Fabrics against Three Different Microbe Aerosols</u>, Shimasaki, 2018</p>	<p>“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.”</p>
<p>21) <u>The use of masks and respirators to prevent transmission of influenza: a systematic review of the scientific evidence</u> 21) <u>The use of masks and respirators to prevent transmission of influenza: a systematic review of the scientific evidence</u>, Bin-Reza, 2012</p>	<p>The use of masks and respirators to prevent transmission of influenza: a systematic review of the scientific 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.”</p>
<p>22) <u>Facial protection for healthcare workers during pandemics: a scoping review</u>, Godoy, 2020</p>	<p>“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.”</p>
<p>23) <u>Assessment of Proficiency of N95 Mask Donning Among the General Public in Singapore</u>, Yeung, 2020</p>	<p>“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.”</p>
<p>24) <u>Evaluating the efficacy of cloth facemasks in reducing particulate matter exposure</u>, Shakya, 2017</p>	<p>“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.”</p>
<p>25) <u>Use of surgical face masks to reduce the incidence of the common cold among health care workers in Japan: a randomized controlled trial</u>, Jacobs, 2009</p>	<p>“Face mask use in health care workers has not been demonstrated to provide benefit in terms of cold symptoms or getting colds.”</p>

<p>26) <u>N95 Respirators vs Medical Masks for Preventing Influenza Among Health Care Personnel</u>, Radonovich, 2019</p>	<p>“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.”</p>
<p>27) <u>Does Universal Mask Wearing Decrease or Increase the Spread of COVID-19?</u>, Watts up with that? 2020</p>	<p>“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.”</p>
<p>28) <u>Masking: A Careful Review of the Evidence</u>, Alexander, 2021</p>	<p>“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.”</p>
<p>29) <u>Community and Close Contact Exposures Associated with COVID-19 Among Symptomatic Adults ≥18 Years in 11 Outpatient Health Care Facilities — United States, July 2020</u>, Fisher, 2020</p>	<p>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 <u>most of the time</u>.</p>
<p>30) <u>Impact of non-pharmaceutical interventions against COVID-19 in Europe: a quasi-experimental study</u>, Hunter, 2020</p>	<p>Face masks in public was not associated with reduced incidence.</p>
<p>31) <u>Masking lack of evidence with politics</u>, CEBM, Heneghan, 2020</p>	<p>“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.”</p>
<p>32) <u>Transmission of COVID-19 in 282 clusters in Catalonia, Spain: a cohort study</u>, Marks, 2021</p>	<p>“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.”</p>
<p>33) <u>Non-pharmaceutical public health measures for mitigating the risk and impact of epidemic and pandemic influenza</u>, WHO, 2020</p>	<p>“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.”</p>

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 misuse) 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, Eugypius, 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 against influenza: 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 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. "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 than 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, Corona 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, Corona 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 O₂ drop and fatigue ($p < 0.05$), a clustered co-occurrence of respiratory impairment and O₂ drop (67%), N95 mask and CO₂ rise (82%), N95 mask and O₂ 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 closer 2) 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 FEV₁ 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 FEV₁ < 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 deprivation. 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 deprivation, 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](https://www.researchsquare.com/article/rs-124394/v2), 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 O₂ 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 Children A Randomized Clinical Trial, Walach, 2021

“A large-scale survey in 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-fernauld-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



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Sent: January 31, 2023 3:15 AM
To: Unity
Subject: document
Attachments: COVIDdsrKaris.docx

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 cost¹ and has had very little impact on the transmission of COVID². It stands to reason that cloth 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 virus³. 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 tract⁴ and inducing the production of IgA⁵, 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 delay⁶
- 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 development⁷
- 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 immunity⁸, 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 changing⁹. 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 if 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/NBK51516/>

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 unconstitutional¹⁰, poorly researched, did not go through appropriate clinical trials¹¹, 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 tissue¹², increased clotting profiles¹³, and even neurological damage¹⁴ 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/>

⁹ <https://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>

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>

Dale Richardson

From: SRFax Delivery Notification <fax@srfax.com>
Sent: July 28, 2022 2:14 PM
To: Dale Richardson
Subject: SRFax Transmission Successful to ATTN: Opposition Board - 1 819-953-2476
Attachments: 20220728130523-6482_06.pdf



Transmission Status:	Sent
Subject:	Counter Statement - ref. no. 2029297
Ref. Code:	202927
Sender:	639-630-2551 (dale.richardson@dsrkarisconsulting.com)
Fax Sent:	Jul 28, 2022 03:07 PM
Recipient Fax:	1 819-953-2476
Remote Fax ID:	Fax Server
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Preview of Page 1.

DSR Karis Consulting Inc. 1292 95TH ST NORTH BATTLEFORD North Battleford, SK S9A0G2 Tel: 306-441-7010 Fax: 639-630-2551	Fax
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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)

**DSR Karis Consulting Inc.
1292 95TH ST
NORTH BATTLEFORD
North Battleford, SK S9A0G2
Tel: 306-441-7010 Fax: 639-630-2551**

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

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Counter Statement to Opposition

The Registrar of Trade-marks
Canadian Intellectual Property Office
Opposition Board
Place du Portage
50 Victoria Street
Gatineau, Quebec, K1A 0C9
Fax: 819-953-2476

Applicant

DSR Karis Consulting Inc.
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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 negligence 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 possess.*** 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 whistleblowing 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

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- 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 Federal 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 collateral 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 interference 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

From: SRFax Delivery Notification <fax@srfax.com>
Sent: March 6, 2023 3:29 AM
To: Dale Richardson
Subject: SRFax Transmission Successful to ATTN: Supervisor - 1 613-960-6147



Transmission Status:	Sent
Subject:	URGENT CLAIM
Ref. Code:	
Sender:	639-630-2551 (dale.richardson@dsrkarisconsulting.com)
Fax Sent:	Mar 06, 2023 02:03 AM
Recipient Fax:	1 613-960-6147
Remote Fax ID:	6139606147
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Preview of Page 1.

DSR Karis Consulting Inc. 1292 95TH ST NORTH BATTLEFORD North Battleford, SK S9A0G2 Tel: 306-441-7010 Fax: 639-630-2551	Fax
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.

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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: 306-441-7010 Fax: 639-630-2551**

Fax

To: ATTN: Supervisor

From: DSR Karis Consulting Inc.

Fax: 1-613-960-6147

Date: Mar 06, 2023 01:36 AM

Organization: CRCC for RCMP

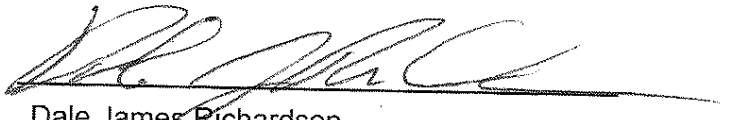
Subject: URGENT CLAIM

Documents for Claim. Place this before a supervisor.

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U.S. Criminal Complaints
I am the director of DSR Karis Consulting Inc. and I
certify that is a true copy of the federal corporations
records

Dale Richardson



Dale James Richardson

From: Dale Richardson
Sent: March 5, 2023 5:36 PM
To: K Chestermere Service (RCMP/GRC)
Cc: Agatha Richardson; a.stra.n.r@gmail.com
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 IL_2.pdf; CST Smith Harassment 02 28 2023 6_31 PM.m4a

Importance: High

Attached 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.

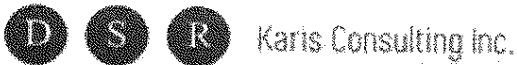
A file number has not been issued to date for the intimidation complaint regarding CST SMITH and NEUFELD on February 28, 2023. A file number is expected before the end of business tomorrow. Furthermore, all of the

U.S. Criminal Complaints

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
dale.richardson@dsrkarisconsulting.com
www.dsrkarisconsulting.com
Tel 587 575 5045



ENGINEERING REIMAGINED

I am the director of DSR Karis Consulting Inc. and I certify that is a true copy of the federal corporations records

A handwritten signature in black ink, appearing to read 'Dale James Richardson', is written over a horizontal line.

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:

- The conduct of an RCMP officer in the performance of their policing duties
- 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:

- Directly involved in the incident
or
- A witness to the incident
or
- 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

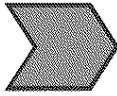


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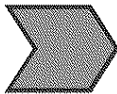
PUBLIC COMPLAINT FORM

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
1292 95 Street		North Battleford		SK	S9A 0G2
Email address		Primary Telephone number		Cellphone number	
dale.richardson@dsrkariconsulting.com		587-575-5045			



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

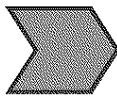
If yes, did you sign an agreement with the RCMP to resolve this complaint informally?

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

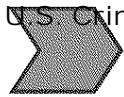
PLEASE NOTE: Exceptions to the one-year time limit are reviewed & granted on a case-by-case basis.



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*.

<p>Family Name: _____</p> <p>Given Name: _____</p> <p>Telephone Number: _____</p> <p>E-mail Address: _____</p>	<p>By providing this information, you are authorizing the CRCC and the RCMP to:</p> <ul style="list-style-type: none"> • 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)

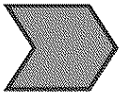
Date of incident: <u>Feb 23, 2023</u> <small>(Required) YEAR, MONTH, DAY</small>	Location (city, town): <u>Chestermere</u>
Time of incident: <u>Afternoon</u>	Province: <u>AB</u> <small>(Required)</small>

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.

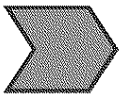


RCMP MEMBER(S)

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	a.stra.n.r@gmail.com
Agatha Richardson	agathar8@gmail.com

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: 587-575-5045

BRIEF EXPLANATION

If you need more space, you may attach additional sheets of paper to this form.

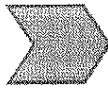
I need an email to provide the video evidence of the intimidation that was supplied to the Chestermere RCMP.



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)

RCMP USE ONLY (to be signed by RCMP members if form is completed on behalf of an individual)

I have reviewed this completed public complaint form and the information I have provided is true and accurate to the best of my knowledge.

I have reviewed this completed form with the individual and the information provided is true and accurate to the best of their knowledge.

Name (print): Dale J. Richardson

Name & rank (print): _____

Signature: [Handwritten Signature]

Signature: _____

Date (Required): 2023/03/05

Date (Required): _____

(YEAR, MONTH, DAY)

(YEAR, MONTH, DAY)



CONTACT INFORMATION

Completed complaint forms can be submitted

Complaint forms may also be completed

BY MAIL

ONLINE

Civilian Review and Complaints Commission for the RCMP

www.complaintscommission.ca

P.O. Box 1722, Station B
Ottawa, ON K1P 0B3

BY FAX

1-613-960-6147



























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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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.

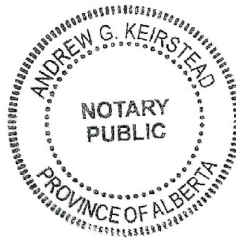
Affirmed before me at the City of Chestermere, in the Province of Alberta, in the Country of Canada, this 11th day of January, 2023.



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



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 me 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 to teach you, watching you develop and learn. I will always be proud of you as your father. Regardless of whether you are 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 daughter's 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.

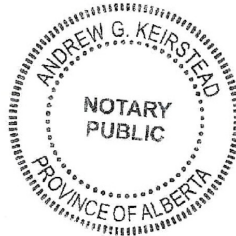
Affirmed before me at the City of Chestermere, in the Province of Alberta, in the Country of Canada, this 11th day of January, 2023.



Notary Public **ANDREW G. KEIRSTEAD**
Barrister, Solicitor and Notary Public

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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). Fatalities 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 placed 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.



**NOVEL CORONAVIRUS (COVID-19):
Interim Infection Prevention and Control Guidance
Outpatient and Ambulatory Care Settings**

	<ul style="list-style-type: none"> 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 <p>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</p> <table border="1"> <thead> <tr> <th>Air exchanges per hour</th> <th>99%</th> </tr> </thead> <tbody> <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> </tbody> </table> <ul style="list-style-type: none"> 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 <p>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</p>	Air exchanges per hour	99%	2	138	4	69	6	46	12	23	15	18	20	14
Air exchanges per hour	99%														
2	138														
4	69														
6	46														
12	23														
15	18														
20	14														
CONTINUOUS MASK USE	<ul style="list-style-type: none"> Refer to the following documents: <ul style="list-style-type: none"> Continuous Mask Use (Staff) CV-19 G0043 Masking Guidelines for Patients/Residents/Clients CV-19 G0051 Masking and PPE Guidelines for Family Member/Support 														
CONTINUOUS EYE PROTECTION	<ul style="list-style-type: none"> Refer to the following documents: <ul style="list-style-type: none"> Continuous Eye Protection (staff) CV-19 G0051 Masking and PPE Guidelines for Family Member/Support 														
PERSONAL PROTECTIVE EQUIPMENT (PPE)	<ul style="list-style-type: none"> 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 														
STAFF ATTIRE/ PERSONAL ITEMS	<ul style="list-style-type: none"> Refer to Ways to Stay Safe at Work and Frontline Worker Safety Guide 														



*In this document, the term “patient” is inclusive of patient and client
Developed by SHA Infection Prevention and Control

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:

$$t_2 - t_1 = - [\ln (C_2 / C_1) / (Q / V)] \times 60, \text{ with } t_1 = 0$$

where

- t1 = initial timepoint in minutes
- t2 = final timepoint in minutes
- C1 = initial concentration of contaminant
- C2 = final concentration of contaminant
- $C_2 / C_1 = 1 - (\text{removal efficiency} / 100)$
- 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 $C_2 \div C_1 = (\text{removal efficiency} \div 100)$, 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 veterinarians 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 Safety 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 <i>Escherichia coli</i> 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, auto-clave 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 Hemorrhagic Fever (CCHF), Lassa, and other hemorrhagic fevers; Smallpox (variola virus); Monkeypox; Eastern equine encephalitis (EEE); <i>Bacillus anthracis</i> (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 are a number of issues 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 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 will 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 be 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



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.

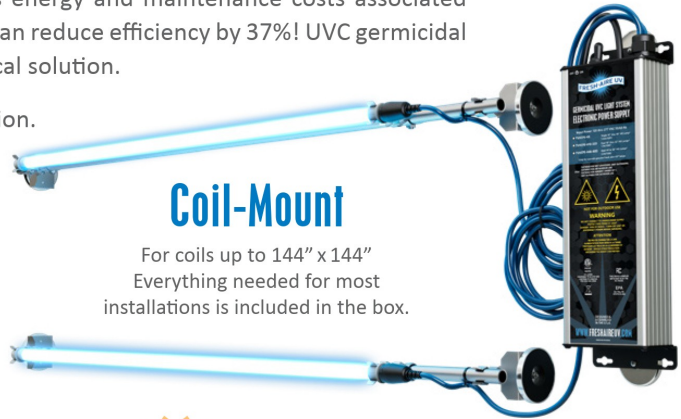
Blue-Tube XL offers easy and flexible installation. It includes an advanced multi-voltage, water-resistant power supply. All parts (except lamps) are covered by a lifetime warranty. This system also improves indoor air quality by sterilizing airborne bacteria, viruses, and allergens.

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 (TUV-INTLCK-SP)
- Produces no harmful ozone

BENEFITS

- 99.9% surface disinfection GUARANTEED (coil)
- Sterilizes mold, bacteria, viruses
- Disinfects coil & drain pan
- Improves HVAC system efficiency (coil)
- Improves indoor air quality



Coil-Mount

For coils up to 144" x 144"
Everything needed for most installations is included in the box.



Duct-Mount

Use 1, 2, or 3 BTXL Dual Systems for duct-mounting parallel to the air stream for maximum airborne disinfection.



BLUE-TUBE XL STERILIZES BIOLOGICAL PATHOGENS

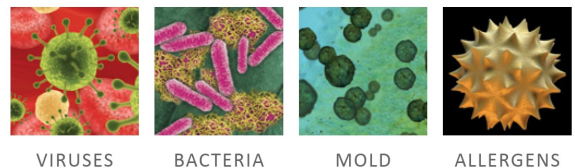


Figure 6: Courtesy of Fresh-Aire UV

**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 Technologies Inc.
146 Barr.
St-Laurent, Qc.,
H4T 1Y4

p. 1.888.726.8869
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e. info@sanuvox.com

TECHNICAL SPECS: S300 MED2
PORTABLE UV AIR PURIFIER & FILTER

Description

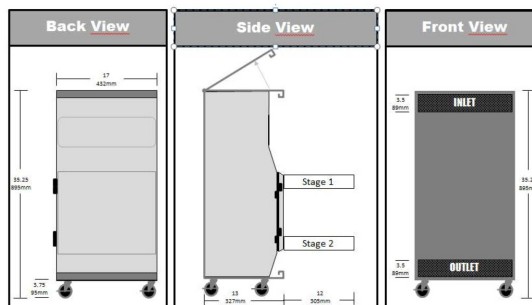
The S3000 MED2 is a portable ultraviolet air purifier with filters. The S300 G MED2 is designed to filter and purify harmful pollutants and biological contaminants.

MOTOR:

- Purifier fan motor: direct drive centrifugal fan with backward curved blades: unit can be positioned upright or sideways
- Motor only: 115 volts, 1.25 amps, 230 volts, .62 AMP backward impeller - 115 V (part MSCMTR11), 230V (part MSCMTR7)
- 300 cfm (no load)

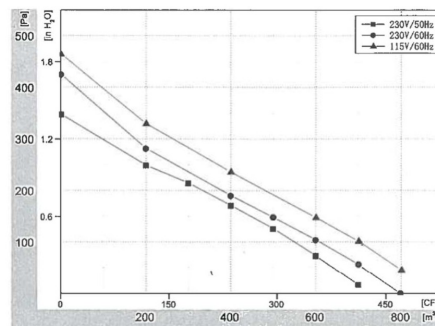
UNIT:

- 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

Technical Specifications

- Height: 23"; Width: 14.5" x 14.5"
- Weight 45 lbs.
- Perforated steel intake housing (filter deck); 360° intake
- Air flow output from upper deck, directed one side
- Bottom plate easily removed for filter access
- Baked-on powder coat finish
- Available in sandstone, white and black

HealthMate™



Featuring America's Number 1 Filter

Austin Air cleaners have been consistently rated at the top of air cleaner categories in independent testing. The HealthMate™ cleans up with 15 lbs. of Carbon-Zeolite mix and True Medical HEPA filter media for adsorption of odors and gases.

Filter Assembly

- 13.5" diameter, 14.5" height
- 60 sq. ft. true HEPA medical filter medium
- Nearly 15 lbs mixture of solid activated carbon and zeolite
- Meets HEPA standards, trapping 99.97% of all particulates larger than 0.3 microns
- Foam sealing gaskets top and bottom
- Total weight 23 lbs

PERMAFILT Prefilter

- Traps large dust particles
- Designed to be vacuumed from outside and eliminate costly 3 month filter changes

Fan and Motor Assembly

- Centrifugal fan
- 3 Speed control switch
- Power rating: 1.2 amps, 120 volts
- 132 Watt power consumption at highest setting
- Motor type: permanent split capacitor, rated for continuous high RPM, long life duty
- Motor mounted on shock absorbers
- CSA and UL approved

Fan Rating:

- 400cfm on high setting

Warranty:

- 5 years on all parts and labor

Filter Guarantee:

- 5 year pro-rated guarantee under normal residential use

austin

Your Qualified Austin Air Dealer:

Figure 9: Courtesy of Austin Air Systems

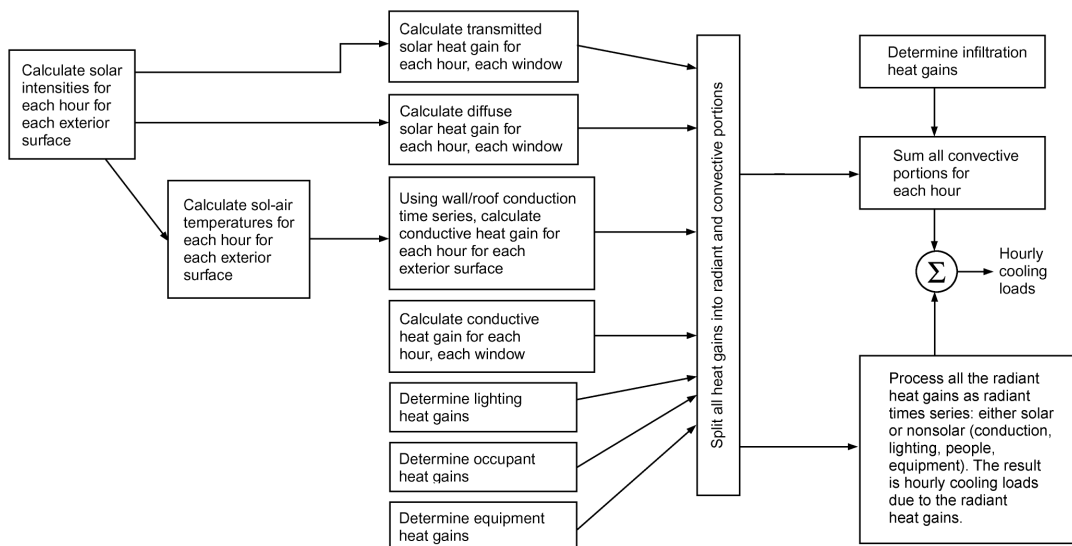
SIMULATION

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.

Nonresidential Cooling and Heating Load Calculations

18.23



E, Inc.

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 and 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	
Weighth (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.

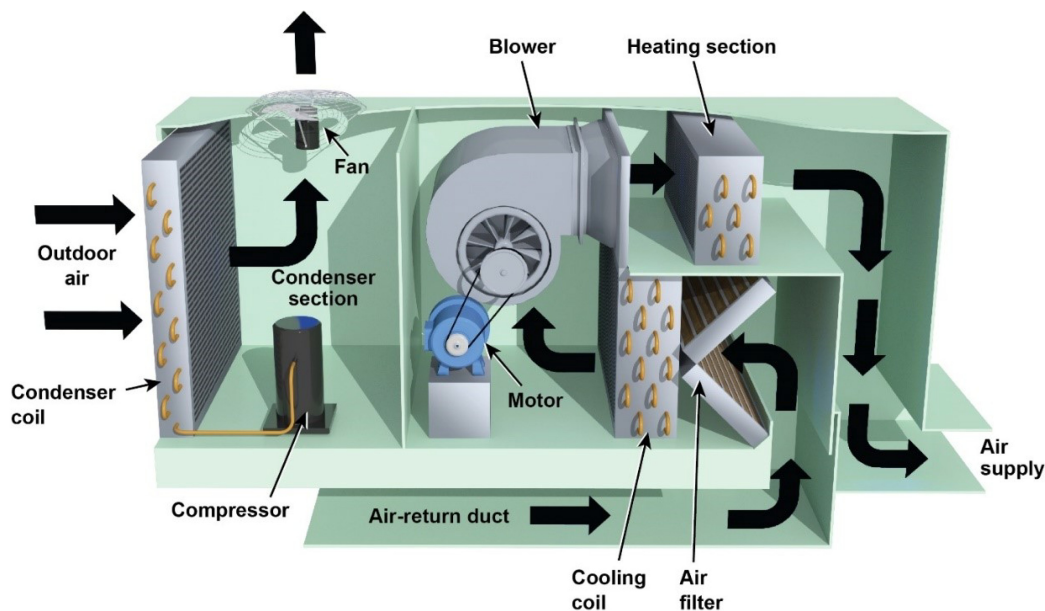


Figure 11: Rooftop HVAC System (Courtesy of PNNL)

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.

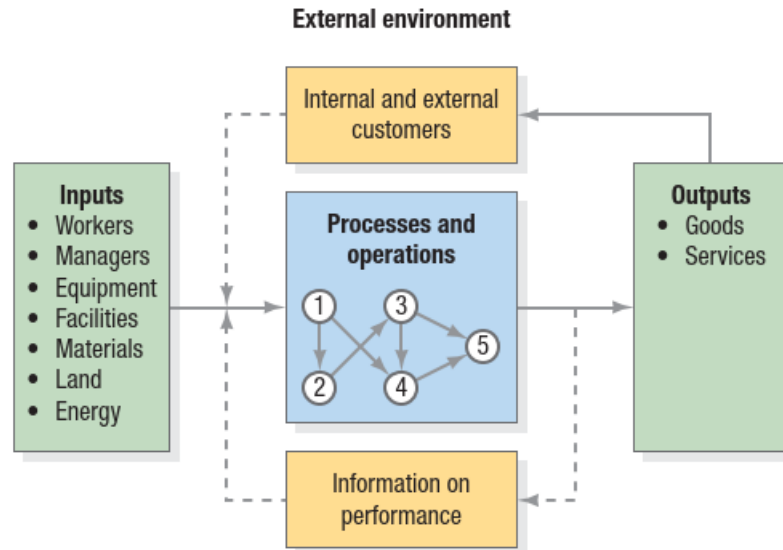


Figure 12: Operations (Courtesy of Pearson)

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		
Installation 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 Comparison

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

$$\text{Total} = E + A + [(P + F + U)/3]$$

- 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 of 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 purportedly 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 disastrous 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 is 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 probable 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 administrative 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 overthrow 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 Administrator 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

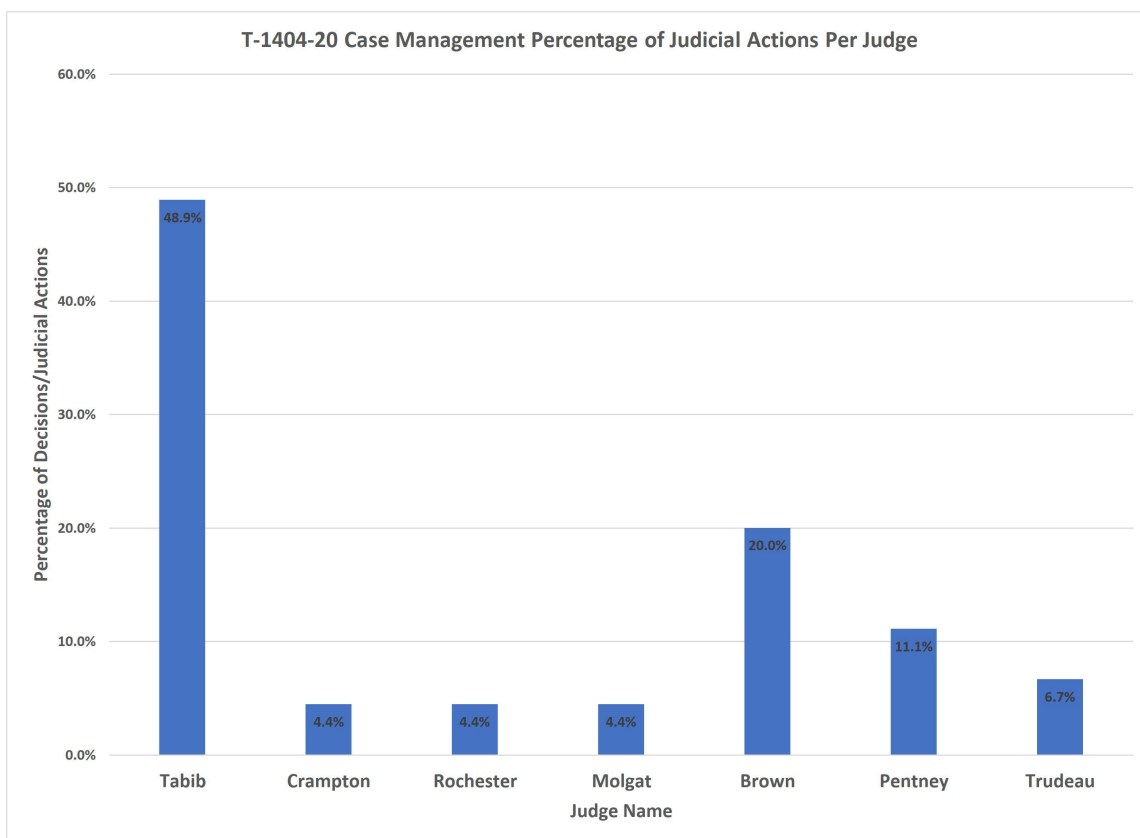


Table 5: T-1404-20 Data

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 be 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.

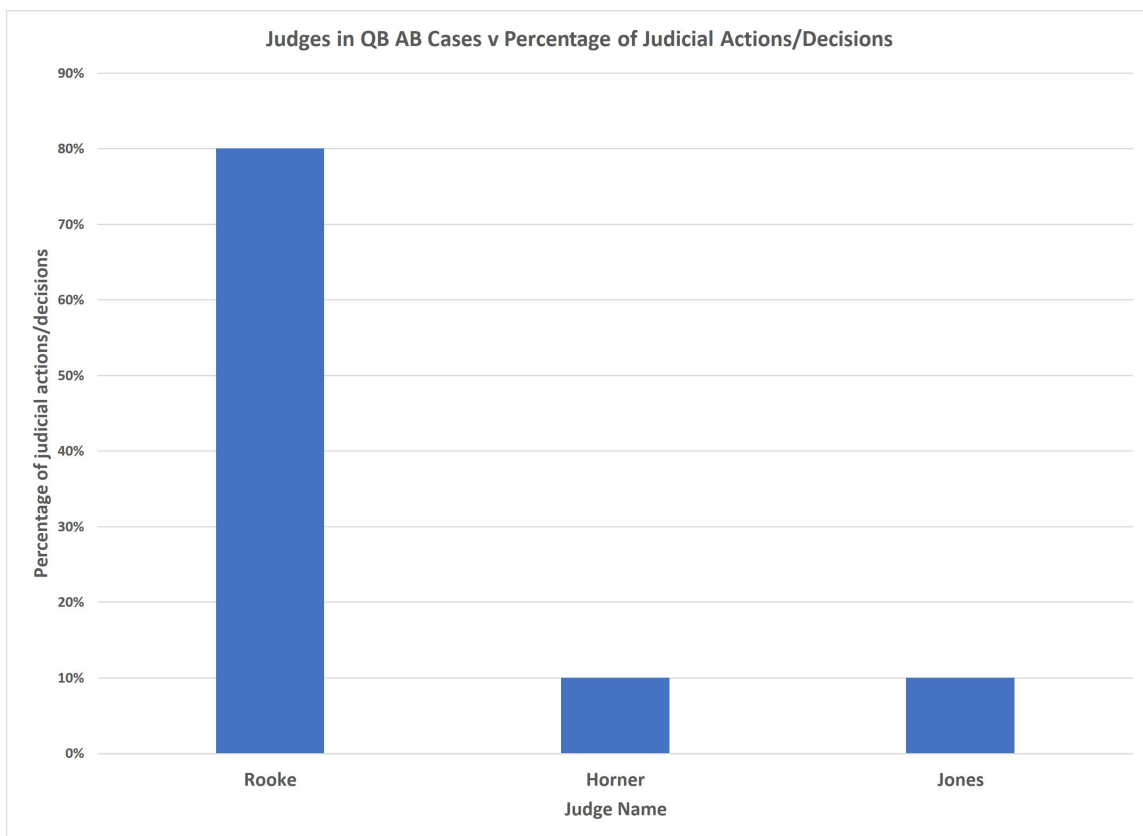


Table 6: Queen's Bench for Alberta Data

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.

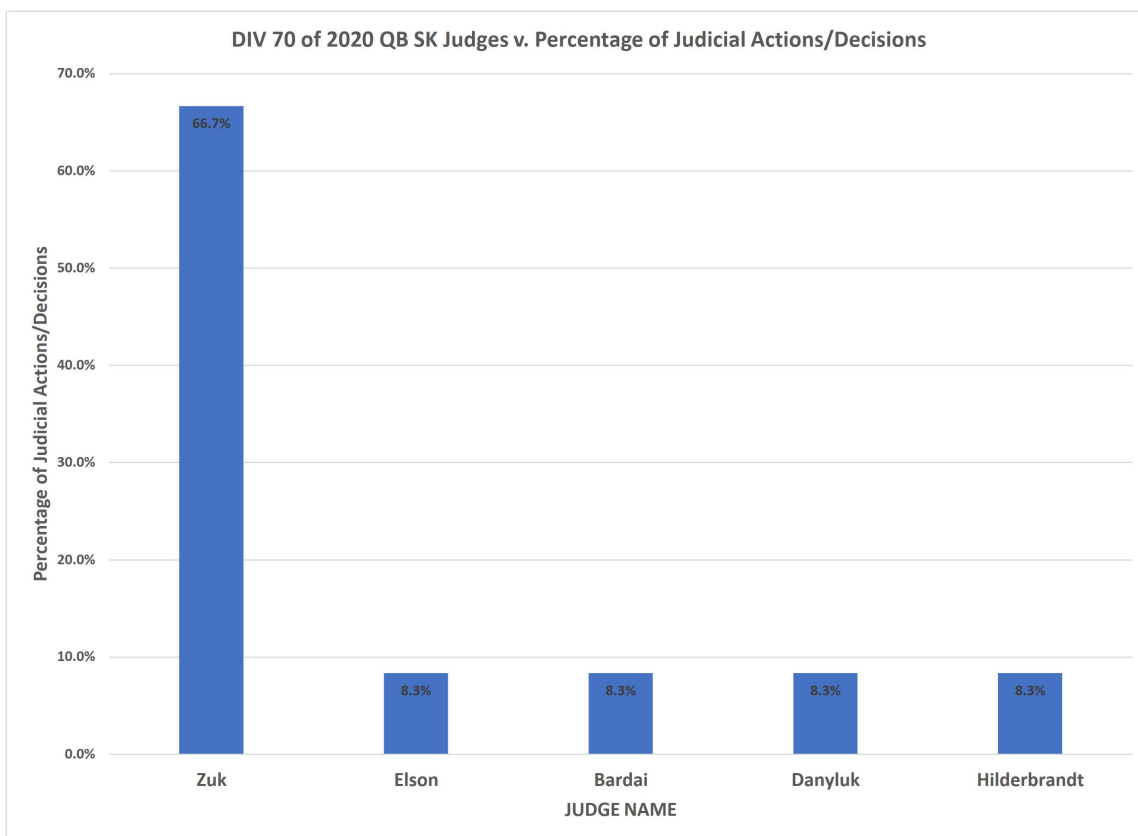


Table 7: DIV 70 of 2020 (SK) Data

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 are 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.



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 \$30.00

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.

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

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



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

COURT FILE NUMBER DIV NO. 70 OF 2020COURT OF QUEEN'S BENCH FOR SASKATCHEWAN
(FAMILY LAW DIVISION)JUDICIAL CENTRE BATTLEFORDPETITIONER KIMBERLEY ANNE RICHARDSONRESPONDENT DALE JAMES RICHARDSON

Before the Honourable

Mr. Justice L.W. ZukJuly 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.

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:	<u>Via Telephone</u>
Date:	<u>July 23,2020</u>
Time:	<u>10:00 a.m.</u>

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.

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

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

page 1

Date	Nature of Order	Judge
------	-----------------	-------

July 23/20	Elson, J.	
P. Meikeijohn - telephone		
no one for respondent.		
Reserved - pending information from Mrs Meikeijohn		
KJ Elson		

July 23, 2020

Counsel for the petitioner has provided the Court with his client's internal estimate of the amount of equity in the family home, roughly between \$8000 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 house, followed by an accounting to 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.

Elson, J.

Counsel Notified Copies Provided

Date: JUL 23 2020

Signed: KJ Elson

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

PART 10: JUDGMENTS AND ORDERS

25

- (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.

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.
---	--

Occurrence details:

Report no.:	20201016013	A Commissioner for Oaths for Saskatchewan being a police officer.
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) 755768C 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:

Protected B

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

Protected B

Remarks:
Narrative:
2020-07-22

██████████ was directed to attend 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

██████████ and Cst. ██████████ went to the Queens Bench court house in Battleford to arrest Dale Richardson and to detain Kaysha Richardson if they attended. Dale Richardson had a Mental Health Warrant and Kaysha Richardson was given an order to self isolate for 14 days by the Sask Health Authority.

██████████ dropped ██████████ at the court house. ██████████ waited around the block.

██████████ saw the Jetta belonging to Kaysha Richardson turning on 3rd ave towards the court house. ██████████ informed ██████████

Approach 0940hrs: ██████████ and ██████████ were waiting on a side block and drove over. ██████████ 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 ██████████. Kaysha Richardson was outside the court house filming the arrest Dale Richardson. ██████████ went to help ██████████ because Dale Richardson was raising his voice and would not listen to Cst. ██████████. ██████████ told Dale Richardson to stop resisting arrest and come with police. ██████████ grabbed an arm of Dale Richardson to pull him away from the vehicle but Dale Richardson pulled away.

██████████ was seen trying to detain Kaysha Richardson but she was not listening. ██████████ gave up on trying to arrest Dale Richardson at the moment and help ██████████ arrest Kaysha Richardson. Kaysha Richardson was given a health order to self isolate and ██████████ believed this posed as a greater risk to officer safety. Cst. ██████████ grabbed an arm of Kaysha Richardson to get her into handcuffs because she was not listening to Cst. ██████████. Kaysha Richardson pulled away from ██████████ and ██████████ as the handcuffs were pulled out. The handcuffs were eventually placed on Kaysha Richardson. Kaysha Richardson still was not cooperating with ██████████ and ██████████ 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. ██████████ had Kaysha Richardson at the door of the police vehicle but she still did not want to go in voluntarily. ██████████ went to the other side and pulled the backpack straps that Kaysha Richardson was wearing to slide her into the police vehicle.

██████████ went back to help out with ██████████ dealing with Dale Richardson. Dale Richardson still not be compliant with commands that ██████████ was giving him. ██████████ and ██████████ arrived to help. Dale Richardson was pulled away from the vehicle and placed against the police vehicle. Dale Richardson still resisting arrest was placed into handcuffs. Dale Richardson was searched for officer safety. The belongings in his pockets were given to his "Agent" that was video recording members. Dale Richardson was voluntarily 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 from stopping the door from closing.

██████████ gave Dale Richardson his right.

Dale Richardson was transferred to Battleford Union Hospital for an assessment.

██████████
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

Protected B

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	
	Adjoin this matter <i>sine die</i> . 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.

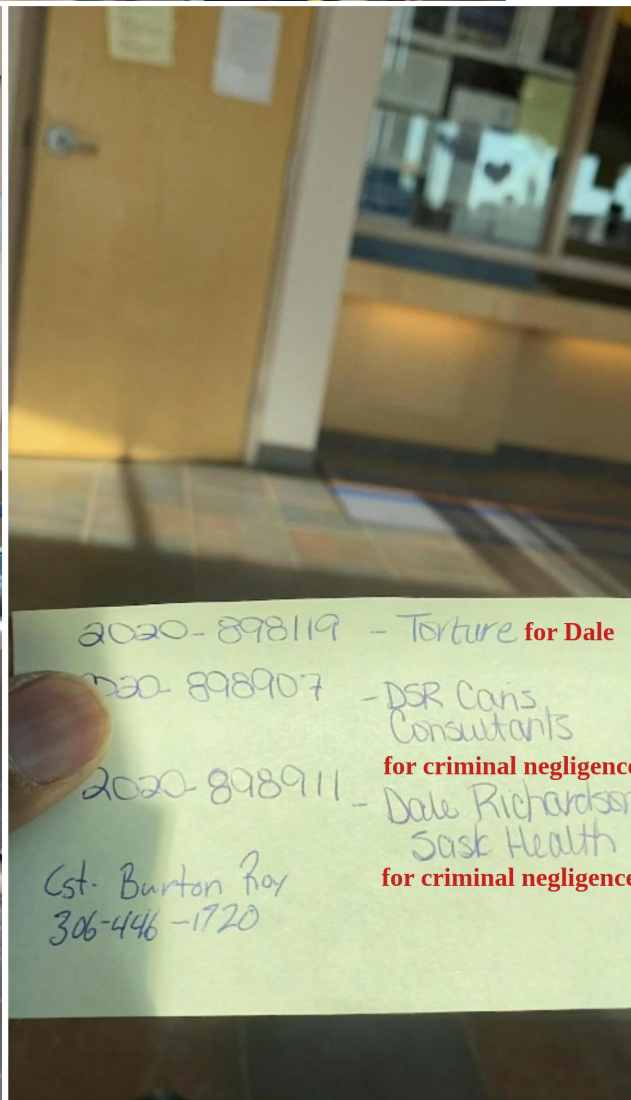


Figure 28: RCMP Cst. Roy Bringing File Numbers for Torture and Criminal Negligence

Even if there was a valid resist arrest warrant, it is not of a greater public interest 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

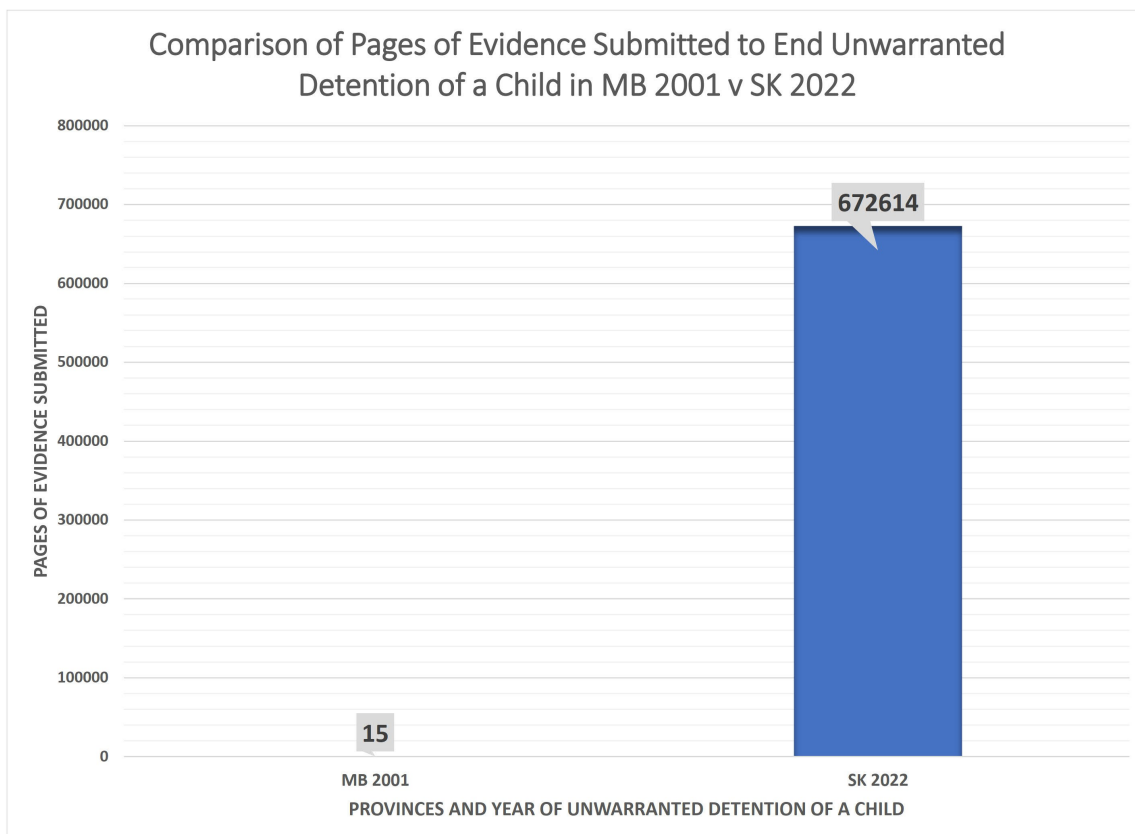


Table 8: Comparison of Pages of Evidence Submitted to End Unwarranted Detention of A Child in MB 2001 v SK 2022

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).

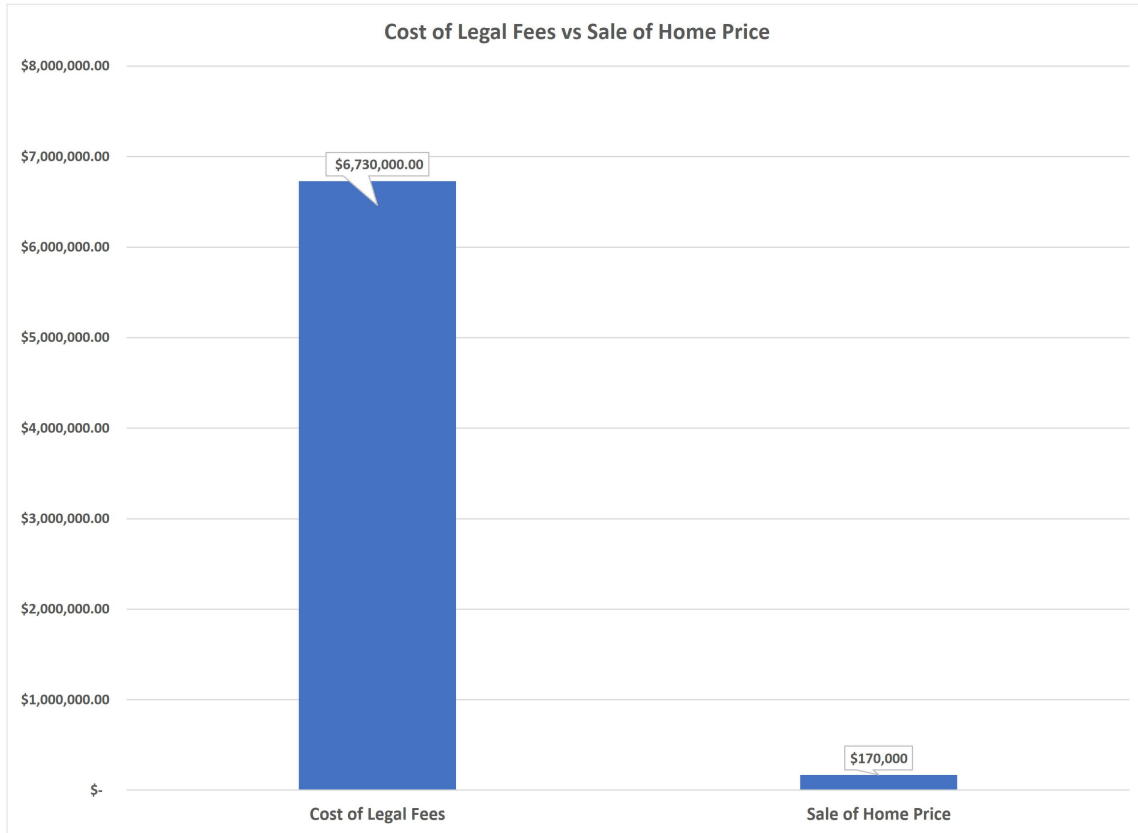


Table 9: Cost of Legal Fees vs Sale of Home Price (SK)

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.

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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

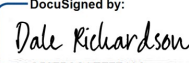
DocuSign Envelope ID: 1CEF9F2F-66F8-485D-AEF4-A02227C753E4

A certificate signed by 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:

8C1268A46D3748C...
(Borrower)

DocuSigned by:

C507B2CAEF271A3...
(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



Certificate Of Completion

Envelope Id: 1CEF9F2F66F8485DAEF4A02227C753E4	Status: Completed
Subject: Interest Only For Mortgage	
Source Envelope:	
Document Pages: 3	Signatures: 2
Certificate Pages: 5	Initials: 0
AutoNav: Enabled	Envelope Originator:
Envelopeld Stamping: Enabled	Dana Lavoie
Time Zone: (UTC-06:00) Saskatchewan	PO Box 1090
	Swift Current, SK S9H 3X3
	Dana.Lavoie@innovationcu.ca
	IP Address: 142.165.148.142

Record Tracking

Status: Original	Holder: Dana Lavoie	Location: DocuSign
6/18/2020 10:42:03 AM	Dana.Lavoie@innovationcu.ca	

Signer Events

Dale Richardson
dalejsr74@outlook.com
Security Level: Email, Account Authentication (None), Access Code

Signature

DocuSigned by:

C507B2CAEF774A3...
Signature Adoption: Pre-selected Style
Using IP Address: 216.197.206.253

Timestamp

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:

0C12CBA4CD3748C...
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.

Technical means of delivery of biological formulations and toxic chemicals

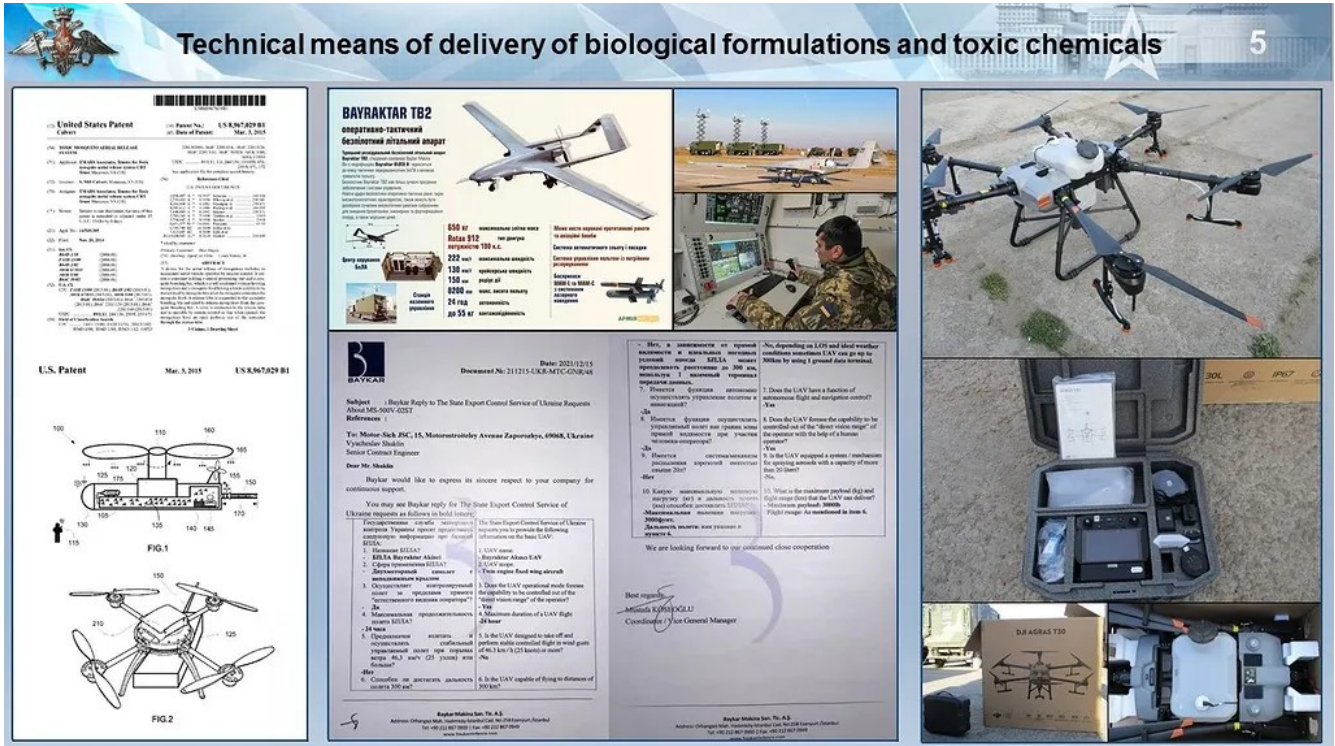


Illustration 1: Delivery of Biological Formulations (Courtesy of Russian MoD)

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: $t_2 - t_1 = -[\ln(C_2 / C_1) / (Q / V)] \times 60$, with $t_1 = 0$

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)



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.

- o 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:

- o Assuring at least 6 feet of space between patient chairs.
- o Creating physical barriers between patient chairs.
- o Orienting operatories parallel to the direction of airflow.
- o 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.
- o 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/COVID19InfectionControlForAerosolGeneratingProcedures.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>



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)

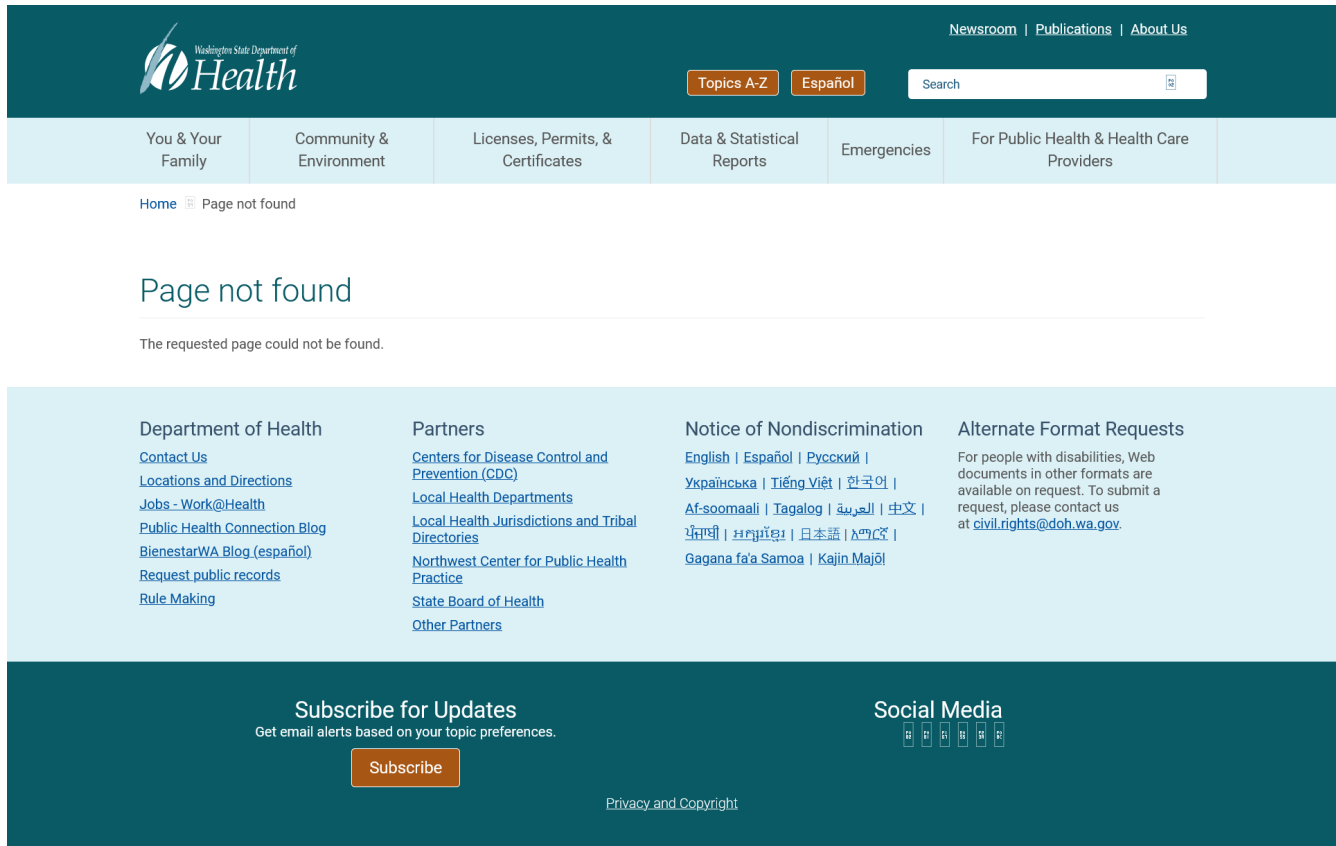


Figure 37: Dental Clinic COVID Flyer First Link Destination

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.

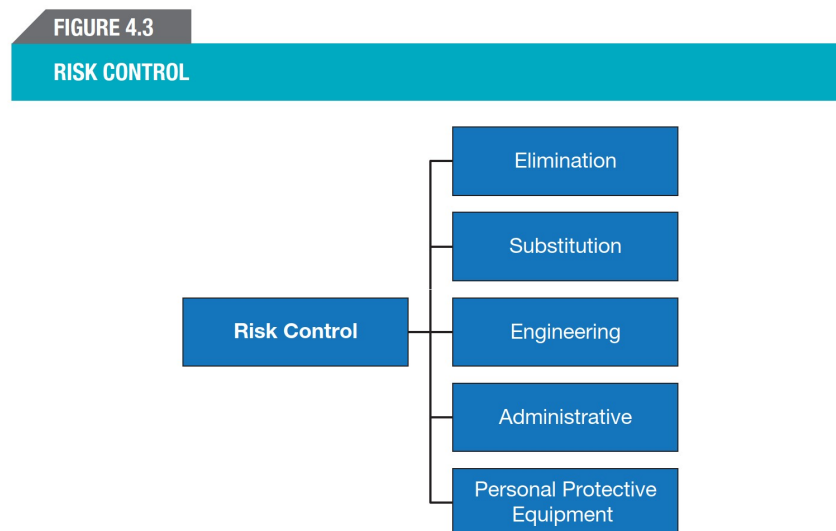


Figure 38: Hierarchy of control (Courtesy of Nelson)

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 or 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

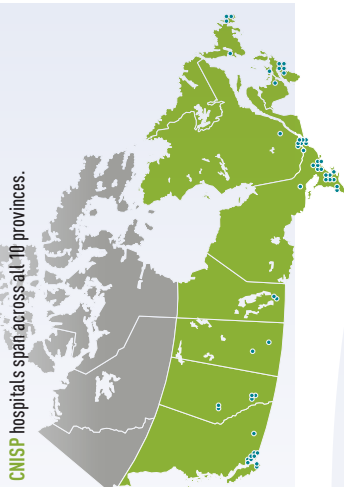
Illustration 3: Canadian Nosocomial Infection Surveillance Program (Courtesy of CNSIP)

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

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*

Canadian Nosocomial Infection Surveillance Program



- 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*

- 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

- 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

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.



Public Health Agency of Canada
Agence de la santé publique du 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).

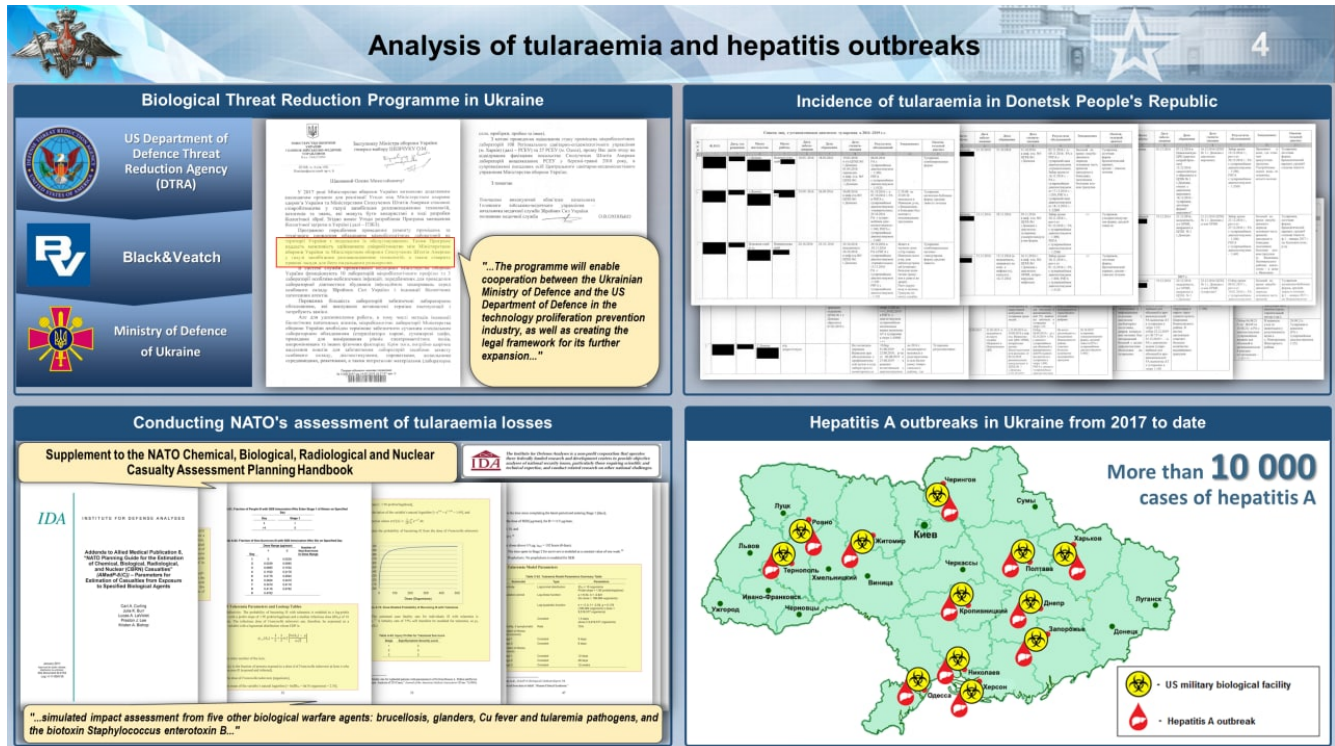


Illustration 4: Analysis of tularaemia and hepatitis outbreaks (Courtesy of Russian MoD)

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.

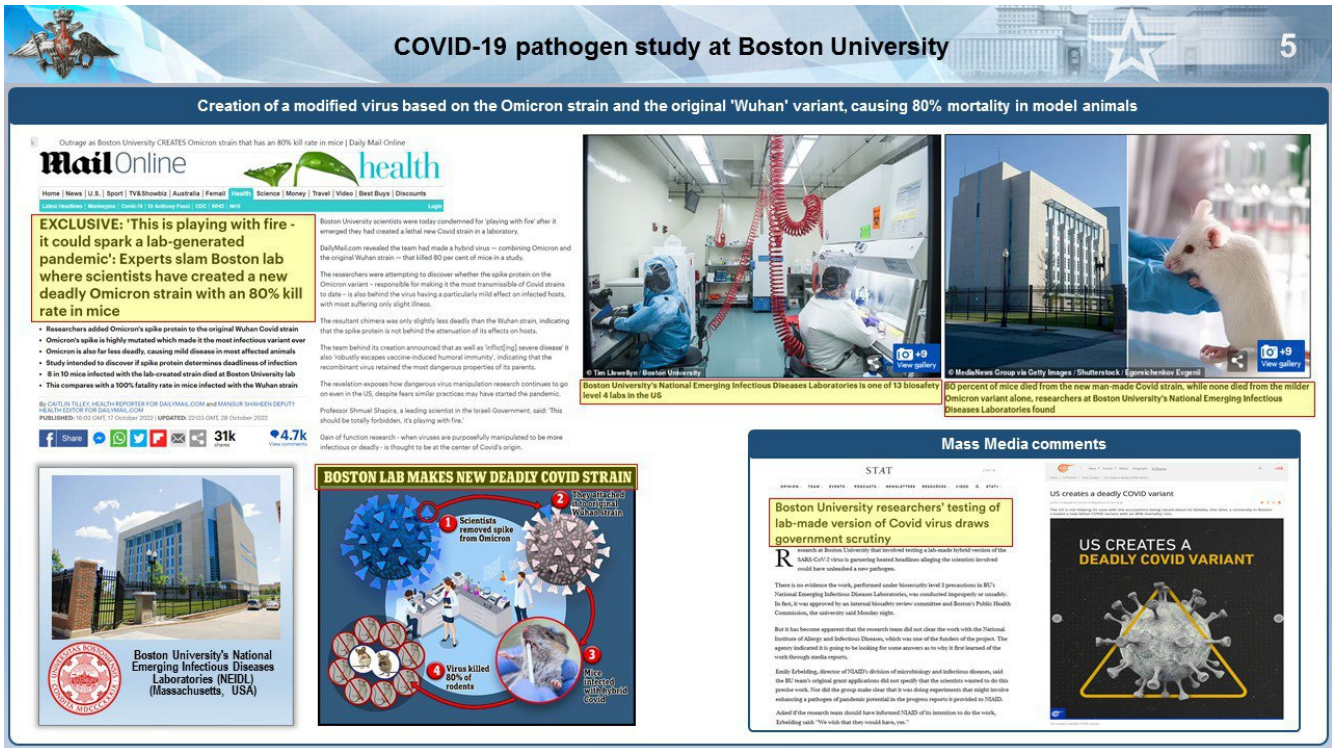


Illustration 5: COVID-19 pathogen study at Boston University (Courtesy of Russian MoD)

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.

Responses of the U.S. and Ukraine to the accusations of developing and accumulating pathogenic materials

Response of the working group of the Ministry of Healthcare of Ukraine on the results of inspecting the conditions of storage of the collection of microbial strains at the Ukrainian Research Anti-Plague Institute (Odessa) in 2018

Anti-Plague Institute of Ukraine named after I. Mechnikov (Odessa)

«... The total number of microbial strains is 654: bacteria: B. Anthracis (2 strains), Brucella abortus (5 strains), Brucella melitensis (4 strains), Brucella suis (2 strains), Francisella tularensis (189 strains), Vibrio cholerae O1 (422 strains) and 9 tick-borne encephalitis viruses»
 «... the fact that the access control system for pathogen collections was found to be **inoperative**... **No documents were provided** to support the assessment of the effectiveness and proper regulation of the supply and exhaust ventilation system in the virology laboratory room...»
 «... in April 2017, there was an **accident in the laboratory** while working with a museum strain of tick-borne encephalitis virus that resulted in the contamination of an employee and indicates that biological safety requirements for working with biological material in the institute's laboratories are **insufficient**...»

Сводный отчет по Программе снижения биологической угрозы на Украине (27.06.2019 г.)

«... Since the contract came into effect in 2008, 10 biological research projects and nine biosurveillance projects have been prepared and submitted to the Defence Department for approval»

Итоги реализации программы DTRA на Украине

Ukraine Presentation
Biological and Toxin Weapons Convention Article V Consultative Meeting

Ukraine's compliance with obligations under the BTWC and engagement in BTRP activities

Modernization of key public health laboratories

Pictures of laboratory facilities renovated within DTRA programmes

According to Ukrainian delegation

«...80 % замечаний, изложенных в отчете, было устранено...»

Illustration 6: U.S. and Ukraine responses to development and accumulating pathogenic materials (Courtesy of Russian MoD)

Shadow members in the US military biological research

H. Biden's interaction with contractors

Biden's lobbying of Metabiota

Representatives of American elites and organisations interested in biological projects

 Kenneth Myers Director DTRA US DOD (2009-2016) Developed and implemented a plan to establish a network of biolaboratories in the former Soviet Union. One of the founders of the Nunn-Lugar Programme. President of the notorious anti-Russian NGO, CRDF Global, with offices in Virginia (USA), Ukraine, Kazakhstan and Amman (Jordan).	 Tara O'Toole Executive Vice President of the Foundation In-Q-Tel The In-Q-Tel Venture Fund is funded by the CIA for a number of covert programmes. In 2001, Tara developed Dark Winter exercise scenario to simulate a terrorist attack using biological weapons. In October 2014, Metabiota founder N. Wolfe was recruited to collaborate	 Thomas Frieden Former head of Centers for Disease Control and Prevention (CDC) Actively involved in the 2014 Ebola outbreak in West Africa. T. Frieden's direct intervention covered up and levelled the scandal of Metabiota's numerous safety failures and negligence	 Francis Collins Former director of The National Institutes of Health (NIH) Together with E. Fauci suppressed scientists' opinions about the artificial origin of COVID-19. Under his leadership, the NIH allocated \$600,000 for research into pathogen amplification. Under his leadership, the NIH allocated \$600,000 for Gain of Function Research	 Jeffrey Wordsworth Former executive director of Battelle Memorial Institute The corporation provided consulting services to the Pentagon for the establishment of biolaboratories in the former Soviet Union. The company's Fort Detrick division was involved in biological research for the US Department of Defense	 Michael Dohlsten Chief Scientist and President of International Research at Pfizer Inc. Responsible for the entire drug cycle, including coronavirus vaccine, adviser to President Obama on drug development and legislation, worked on initiative to accelerate cancer research	 Anthony McQueen Medical Research and Development Command, Fort Detrick Commander Specialist in military medicine. Served in Hawaii and South Korea. Participated in U.S. Army coronavirus vaccine program. The command conducted unethical, secret experiments on animals to study the effects of weapons in 2020.
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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.

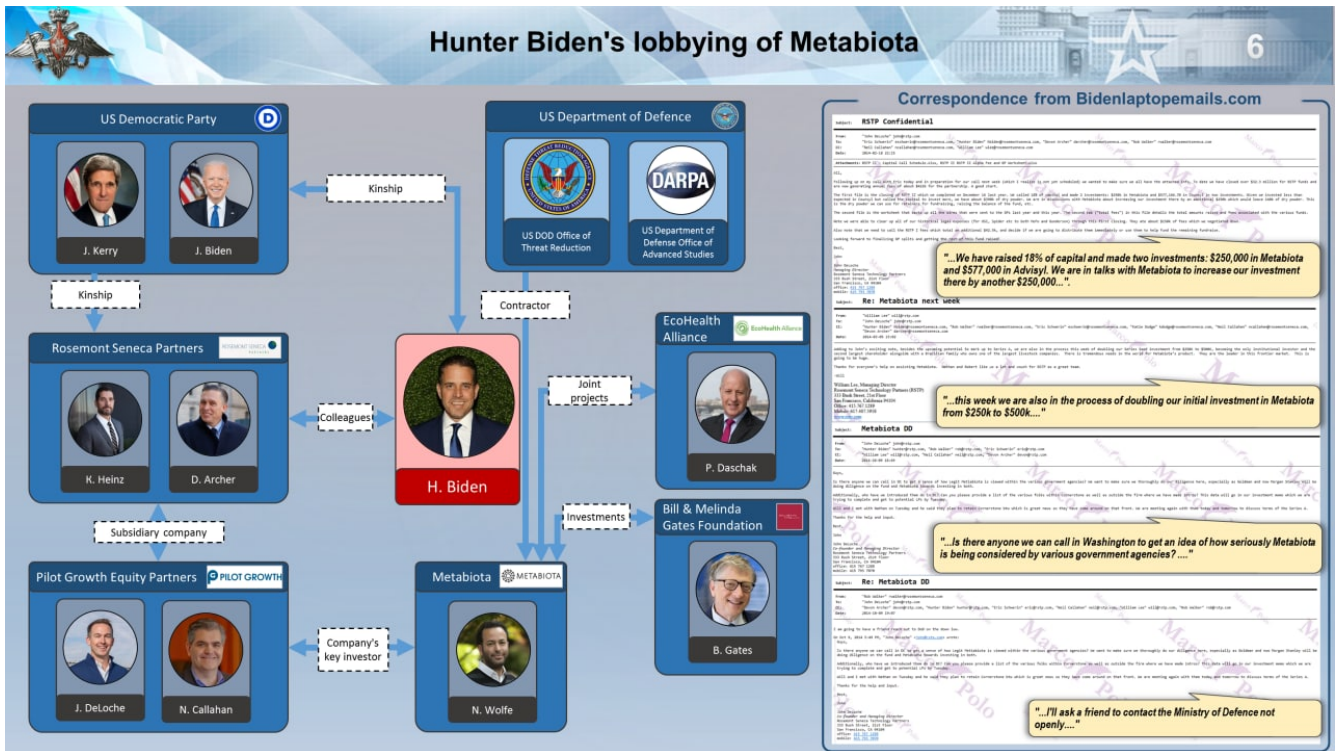


Illustration 8: Hunter Biden's lobbying of Metabiota (Courtesy of Russian MoD)

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.

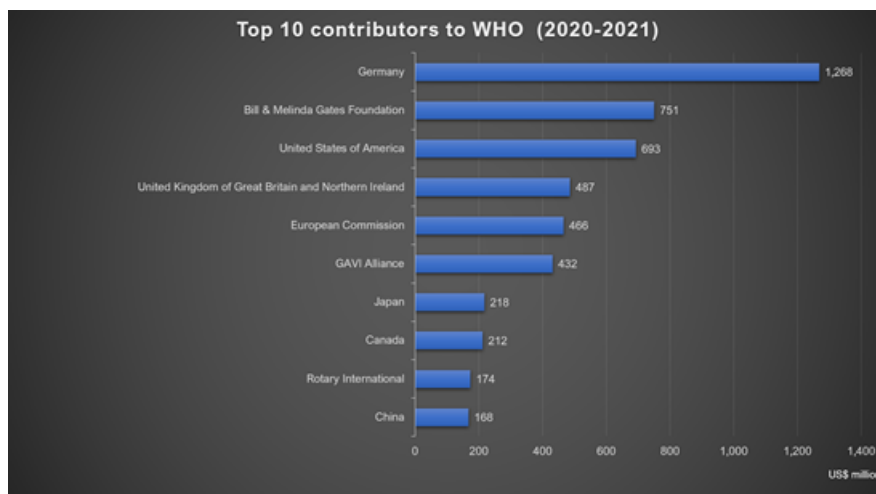


Illustration 9: Top 10 contributors to WHO (2020-2021) (Courtesy of WHO)

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

US engagement with Ukraine's biological facilities

Contractors (government agencies and political organizations)

- US Democratic party
- United States Department of State
- United States Department of Defense
- US Defense Threat Reduction Agency
- United States Agency for International Development (USAID)
- United States Army Medical Research Institute of Infectious Diseases (USAMRIID)
- Walter Reed Army Institute of Research (WRAIR)

Investors (NCO & NGO)

- H. Biden
- Investment fund Rosemont Seneca
- George Soros
- "Open Society" Foundations

Pentagon contractors

- Компания Metabiota
- Компания Black&Veatch
- Компания CH2M Hill

Key Quotes from Email:

- "It is my understanding that Metabiota is a subcontractor of Black & Veatch, a major partner of the defence ministry."
- "We are increasing our investment in Metabiota by \$250,000"
- "As promised, materials on Metabiota's activities in Ukraine and proposals on how to promote Ukraine's cultural and economic independence from Russia have been prepared"

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 rationale 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 Saskatchewan Court 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 Groothuis

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.

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

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.

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,

[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

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).

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; *Morrissey*, *supra*, at paragraph 26; *Malmö-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

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

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 Registrar had 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

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***

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

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.

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 this 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*

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 responsible 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-Herrera 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.

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 Groothuis 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.

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

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 negligence 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.

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.

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;

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;

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

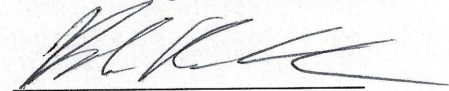
To pay the costs of a full report regarding the criminally negligent guidelines to the Applicant or other person that the Applicant shall decide.

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

DALE RICHARDSON
1292 95th St.,
North Battleford, SK CA S9A 0G2
Tel: 1 306 441-7010
Email: unity@dsrkarisconsulting.com



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

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 inaccurate 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 possess 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 whistleblowing 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.



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.

A handwritten signature in blue ink, appearing to read "Dale J. Richardson", is written over a horizontal line.

Dale J. Richardson
Director
DSR Karis North Consulting Inc.

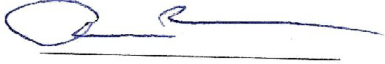
Certification of the Facts and Authenticity of the Documentation

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.

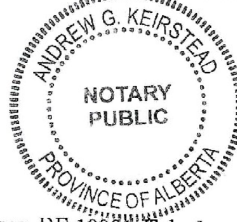


Dale Richardson
Director
DSR Karis North Consulting Inc.

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



CONTACT INFORMATION AND ADDRESS

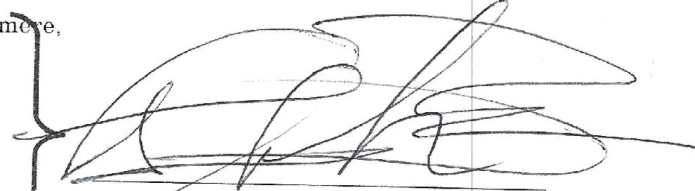
DSR Karis North Consulting Inc.; 8 The Green, Ste A Dover, DE 19901; Telephone number: (306) 441-7010;
Email address: dale.richardson@dsrkarisconsulting.com

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.



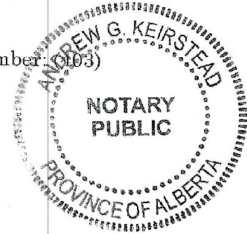
Notary Public for Province of Alberta
Being a Solicitor
ANDREW G. KEIRSTEAD
Barrister, Solicitor and Notary Public



Astra Richardson-Pereira

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