The Case Against Mandatory COVID-19 Vaccinations for Flight Crews

In their decision to mandate COVID-19 vaccines, airline companies have said that they are acting in the best interests of the safety of their employees and customers. Their rationale is that they have come to a "science-based conclusion," yet they provide no references to the science upon which they have formulated this conclusion.

FAQ's provided to employees makes many deeply flawed assumptions and statements. This brief will challenge these statements and assumptions using evidence-based references so that the Union can be fully informed of all of the risks and benefits of this vaccine mandate policy to guide them to make decisions that will support the health and wellness of their members.

The Union bears a responsibility to protect its members from harm that is equal to that of the responsibility of the employer and they must, therefore, challenge the Company's position based on this obligation to their members.

The current position of the Company is that there are no options to consider other than vaccination to confront COVID-19. This paper is not meant to be a complete statement of facts or of a position, rather it is intended to be a summary of the more salient points and to provide the Union with several options to consider, including safe and effective prophylactic and treatment options, as well as the need to test for naturally acquired or cross-reactive immunity. **It should be noted that those who are opposed to this mandatory vaccination policy are not necessarily opposed to vaccinations in general.** Rather, it is the nature of these particular largely experimental vaccines, combined with the fact that there are other options that are safer and more effective available that are not being considered.

The Union and the Company should provide their members and employees with information that details the impact that COVID-19 has had on the health and wellbeing of their employee group, including the statistics of cases, severity of cases, and incidents of death. To make sweeping statements about the impact on health and safety moving forward, they must provide the actual impact the disease has had to date so that it can be determined whether a mandatory vaccine intervention is warranted. Hospitalization and death associated with COVID-19 has been predominantly associated with very elderly populations or those associated with comorbidities.

Both parties are equally responsible for providing statistical evidence that supports their positions that mandatory vaccines are an effective strategy moving forward. Part of this analysis must provide a risk/benefit assessment. They must statistically prove that the risks of vaccinating their employees (and there ARE risks) are outweighed by the benefits that the vaccines confer. Additionally, both parties bear the burden of proving that there are no other options available to their employees to treat or prevent illness.

It is the position of this paper that there are numerous risks associated with the disease itself and with the vaccines. However, an individual might not catch the disease at all with the use of effective personal protective equipment (PPE), hand washing and social distancing, or they might have already acquired the disease and cleared it with their own immune system, or they might use safe and

effective medications and nutraceuticals to prevent or treat the disease. In essence, there are many risk minimizing strategies that people can employ against the disease itself.

The risks associated with the vaccines are numerous and the proposed benefits do NOT outweigh these risks for the majority of people. Once an individual is vaccinated, there is no going back. You cannot un-vaccinate someone and the serious injury and death from the vaccines are known to exist. If the Union and the Company are mandating vaccinations, then they are obligated to inform their members/employees of all of these risks as well as the absolute beneficial effect that they confer.

Finally, the Union should be aware that there are serious consequences, including civil and criminal liability, to anyone that applies coercion to obtain consent for a medical intervention. The Company is applying coercion by mandating that their employees be vaccinated against their free will, and the Union will be complicit in this coercion if they refuse to represent their members' rights to freely decide against the medical intervention.

This document provides information on the following:

Page

1. A Union's Obligation to its Members

"Unionized employees surrender to the Union the right to negotiate and contend on all work-related matters with the employer. Such a transfer of power from workers to Unions reposes significant responsibility in the hands of the Union. Therefore, it is essential that the Union represents the best interests of its members. This legal obligation is referred to as the Union's *duty of fair representation* of the members' interests.

The Canada Labour Code is explicit in both the requirement of a Union acting in a manner reflecting a duty of fair representation of any members, or any applicable employees, and in what constitutes fair representation. Section 37 prohibits Unions from acting in an arbitrary or discriminatory manner or in bad faith when representing employees under the applicable collective agreement.

Labour Relations Boards have further developed the duty of fair representation. They look for Unions to treat all members of a bargaining unit fairly and with good faith. Unions must carefully examine and investigate the grievance, considering its significance and consequences for the Union and the

employee. It is arbitrary to give only superficial attention to the facts or matters in issue, or to decide without concern for the employee's interests.

Favouritism and prejudice should play no part in grievance handling. Unions should consider only relevant lawful matters when deciding whether or not to file or continue grievances. The Union representation must be fair, genuine and not merely apparent. The Union must act with integrity and competence and without serious negligence. The Union must not be hostile towards the employee. The Union's decision must not be arbitrary, capricious, discriminatory or wrongful.
http://www.cirb-ccri.gc.ca/eic/site/047.nsf/eng/00109.html

In short, the Union has an obligation to consider the concerns raised in this document and to ascribe them the serious consideration that they deserve. These are not frivolous concerns. They are life altering from both a medical and career perspective.

2. Differential Risk Analysis: Risks from the Disease vs Risks from the Vaccines

The risks of the disease are different across the population therefore a blanket policy of vaccination across the broad population should not be applied. Rather the risks from the disease MUST be weighed against the risks from the intervention to protect from the disease. If the risks from the vaccines, whether known or suspected, outweigh the risks from the disease, then it would be unethical and, in fact, criminal to continue with the intervention and the policy that mandates it.
http://www.cirp.org/library/ethics/nuremberg/

John Ioannidis (epidemiologist, Stanford University) estimates the infection fatality ratio (IFR) of COVID-19 globally to be approximately 0.15% and that, as of Feb. 2021, there have been about 1.5-2.0 billion people infected worldwide. Ioannidis puts COVID-19 in the same ballpark as influenza (IFR of 0.1%), which is the flu we are very familiar with. It should be appreciated that this IFR for influenza is based on estimates after the adoption of vaccination of many of those at risk, whereas vaccines have only recently become available for SARS-CoV-2.
https://onlinelibrary.wiley.com/doi/epdf/10.1111/eci.13554

Currently, the US CDC data shows the following COVID-19 infection fatality ratios. Some of are likely higher than Ioannidis' estimates, but show again the huge difference based on age:

age group	infection fatality ratio
0–17 years old	0.001%
18–49 years old	0.057%
50–64 years old	0.57%
65+ years old	5.0%

https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/burden.html

Based on this data, the Company's workforce has less than a 0.6% risk of dying from COVID-19 across all age groups. In other words, there is a greater risk of dying from the drive into work than there is from this disease. We do not want to minimize the negative impact COVID-19 has had for specific populations but this needs to be put into a broader perspective.
https://ourworldindata.org/grapher/share-of-deaths-by-cause?country=~OWID_WRL

Given that COVID-19 affects older people much more than younger people, it has been suggested by many experts that instead of everyone getting vaccinated, we should just vaccinate or otherwise protect the most vulnerable. Healthy young people could forego the vaccines, which have significant adverse and unknown long-term effects. If they get infected, they can recover and gain naturally-acquired immunity, which would effectively contribute to herd immunity. Moreover, hoarding vaccines by developed countries when elderly in poor regions of the world do not have access to vaccines is deeply immoral. It can be calculated from US CDC data that the risk of hospitalization from COVID-19 vaccine injury is about 50-times higher than from SARS-CoV-2 for people under 18 years of age.

https://gis.cdc.gov/grasp/COVIDNet/COVID19_3.html

https://www.cdc.gov/mmwr/volumes/70/wr/mm7031e1.htm

Vaccine-induced immunity is not the only type of immunity. In addition to acquired immunity that we gain through natural infection with SARS-CoV-2, studies have shown that between 20% to 90% of the population already had some form of immunity to the virus before it came along because of previous exposure to similar coronaviruses in the past.

https://insight.jci.org/articles/view/146316

This is called a cross-reactive immunity. https://www.bmj.com/content/370/bmj.m3563 Naturally acquired immunity has been shown to be long lasting, robust and complete. In contrast, vaccine-induced immunity is proving to be narrow-spectrum and short lived.

Natural immunity arises from the production of antibodies against potentially all 28 of the SARS-CoV-2 proteins, although those against the spike, membrane and envelope proteins are the most effective as these proteins are exposed on the exterior of the virus. The antibody response in the lungs and airway spaces to the virus, with the production of IgA, IgE and IgM class antibodies are more appropriate for fighting this respiratory system virus than the IgG class antibodies that are generated in the blood and lymphatic systems in response to the COVID-19 vaccines following intramuscular injection. Establishment of immune memory in response to infection with the SARS-CoV-2 virus is well documented beyond 16 months at the point of preparation of this document.

The difference between Relative Risk Reduction (RRR) and Absolute Risk Reduction (ARR) and why it matters

In Canada, it is the law that an individual be presented with the risk from the disease, the risk from the intervention, and the true effectiveness of that intervention so that they can make an informed decision to truly have informed consent.

https://scc-csc.lexum.com/scc-csc/scc-csc/en/item/13290/index.do

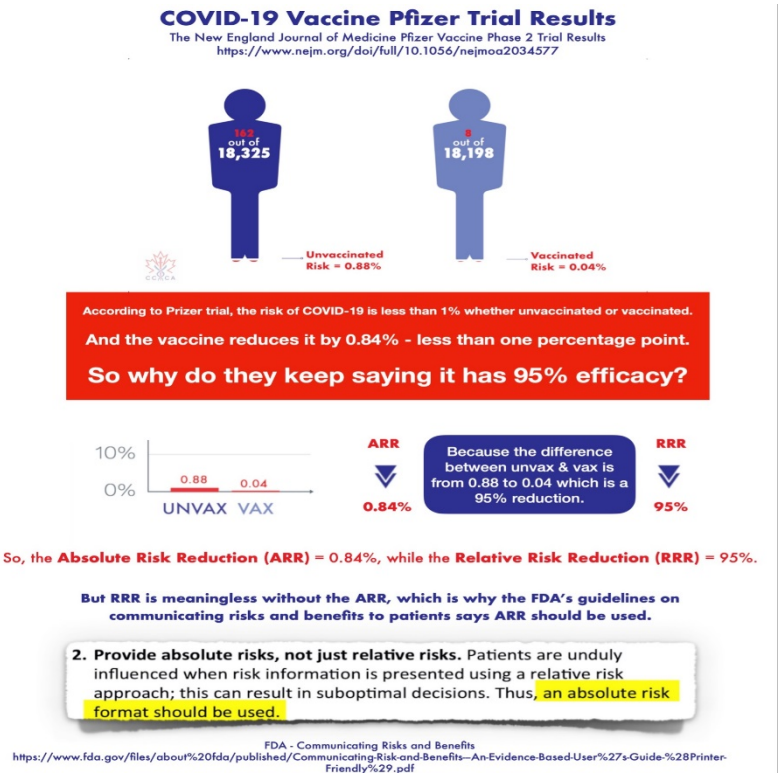
https://www.canlii.org/en/on/laws/stat/so-1996-c-2-sch-a/latest/so-1996-c-2-sch-a.html

When we consider the effectiveness of an intervention, we need to know what advantage is gained by the intervention, in this case COVID-19 vaccination. The authors of the original BNT162b2 mRNA Covid-19 vaccine (Pfizer) safety study used Relative Risk Reduction (RRR) to report the vaccine's efficacy as being 95%. However, RRR is a statistical analysis comparing the outcomes for a study. It does not represent the actual benefit of an intervention to a person. To calculate a person's total reduction of risk from using an intervention, in this case the COVID-19 vaccines, we calculate the Absolute Risk Reduction

(ARR). Using data from the original safety study for the Pfizer vaccine, the absolute risk reduction (ARR) offered by the vaccine for study participants was only 0.84%. This is the proper reflection of a trial participant's benefit for taking the COVID-19 vaccine; a less than 1% reduction in risk of developing symptomatic COVID-19 illness.

With the use of only RRRs, and omitting ARRs, reporting bias is introduced, which affects the interpretation of vaccine efficacy. In clinical publications ARRs tend to be ignored because they give a much less impressive effect size than RRRs. In this case RRRs lead people to believe that the vaccines are far more effective than they really are. The importance of this distinction is highlighted by the following statement from the FDA's publication *Communicating Risks and Benefits: An evidence-based user's guide*, "Patients are unduly influenced when risk information is presented using a relative risk approach; this can result in suboptimal decisions. Thus, an absolute risk format should be used."

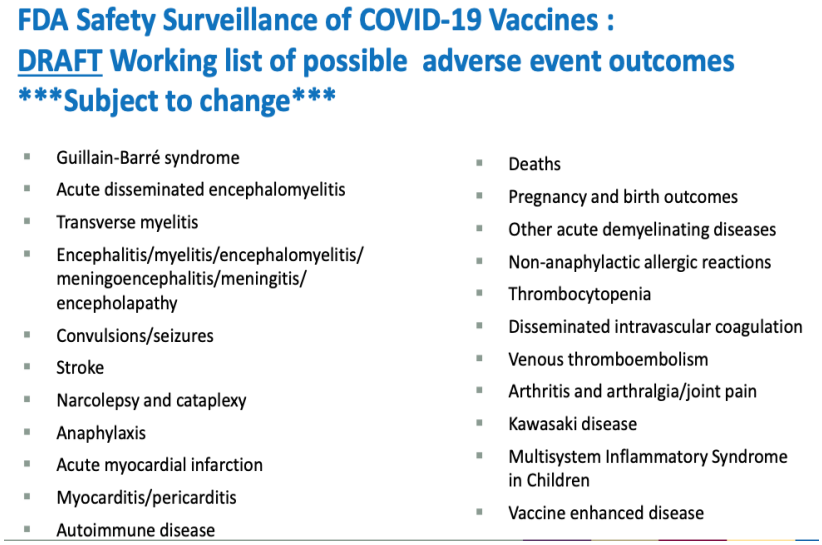
Thus, the vaccines were approved under interim order in Canada based on the Pfizer study which offered less than a 1% benefit to the person receiving the vaccine.



With an understanding of one's true benefit from the COVID-19 vaccine, we must compare this to its risk of adverse events or harm.

In October of 2020 the CDC produced a presentation examining possible side effects from the vaccines. https://www.cdc.gov/vaccines/acip/meetings/downloads/slides-2020-10/COVID-Anderson-508.pdf

On slide 16 of this document is the following:



These are only some of the adverse events that have been captured by the adverse events reporting systems around the world. Refer to section 5 for events that are related to flight crews.

Canadians have not been provided with any of these key pieces of information for them to be able to provide truly informed consent to these vaccinations. It begs the question; would anyone be willing to accept these risks to receive a less than 1% benefit from the vaccines?

3. The Delta Variant: More Contagious but Less Pathogenic (harmful)

Every time a virus replicates, there is potential for it to mutate. These mutations create the variants. Globally, there are an estimated 4000 variants of the SARS-CoV-2 virus.[1] Variants of concerns are those mutant forms of the virus that feature properties that allow them to predominate during the pandemic. Antibodies created by the COVID-19 vaccines are not completely effective in neutralizing or destroying the virus and it has been reported[2] that "there is emerging evidence of variants exhibiting resistance to antibody-mediated immunity elicited by vaccines." Prior to initiating the vaccine program, scientists warned the World Health Organization (WHO) against vaccinating in the midst of a pandemic, particularly with a "leaky," or non-sterilizing, vaccine. The basis for this warning is the well-known paradigm that the use of a leaky vaccine can create ideal conditions for the proliferation of variants within vaccinated individuals. Similar to the creation of antibiotic resistant strains of bacteria, a virus that is not destroyed will continue to replicate until it develops a strain that evades its host's antibodies. On the one hand, the vaccine-induced immunity is thought to be ineffective against these new variants. Indeed, this has been illustrated in a recent study from California where breakthrough cases were found to be caused by vaccine-resistant strains of SARS-CoV-2. **The vaccine does not effectively protect against variants, and may contribute to their creation.**

On the other hand, with variants of concern, like the Delta strain, less than 0.3% of the structure of the proteins encoded by the SARS-CoV-2 genome are altered by mutation. With natural immunity,

[1] https://srhd.org/news/2021/coronavirus-mutations-and-variants-what-does-it-mean

[2] https://www.nature.com/articles/s41579-021-00573-0

antibodies are generated at hundreds of different parts of the 28 viral proteins in SARS-CoV-2. With the COVID-19 vaccines, the antibodies are generated against just the spike protein, which is the largest protein. Nevertheless, scores of different spike protein-directed antibodies are produced in vaccinated individuals, and mutations at best should only result in a tiny reduction in immunity. Moreover, it appears from recent research that the particular parts of the viral proteins where the mutations occur in the variants of concern, are very poor in eliciting the production of antibodies in the first place. **Therefore, the reduction of vaccine-induced immunity against the Delta variant is likely due to general waning immunity against all of the variants of SARS-CoV-2**.

It is now abundantly clear based on emerging studies and clinical observations that both the vaccinated and the unvaccinated can contract, carry and transmit COVID-19 and carry similar viral loads.[3] According to CDC Director, Rochelle Walensky,[4] "The increased viral load associated with the Delta variant appears to make vaccinated people equal spreaders of the virus." This would explain the recent reports[5,6,7,8] of fully vaccinated individuals infecting each other, including some vaccinated individuals becoming hospitalized and even landing in the ICU, and demonstrates the futility in vaccinating groups at low risks of COVID-19. **This makes any vaccine mandates misguided.**

In the UK, which is typically several months ahead of Canada in the epidemic curve, one can see that the peak of infections of the Delta variant does NOT correspond to a peak in deaths, thus one can conclude this variant is more contagious but less lethal than previous strains of the virus. From a public policy perspective, it does not make sense to impose restrictions on people when their risk of hospitalization or death from the new variant is significantly lower than with previous versions of the virus.

[3] https://www.medrxiv.org/content/10.1101/2021.07.31.21261387v4

[4] https://sfist.com/2021/07/27/cdc-confirms-that-viral-loads-in-vaccinated-people-with-delta-are-indistinguishable-from-unvaccinated/

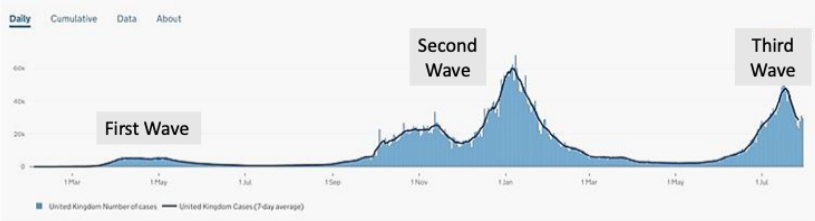
[5] https://www.bbc.com/news/uk-57830617

[6] https://www.baltimoresun.com/opinion/op-ed/bs-ed-op-0804-breakthrough-covid-20210803-t32trfpiwzdf5okfar45f64whi-story.html

[7] https://www.nbcboston.com/news/local/nearly-4000-breakthrough-covid-infections-have-now-been-reported-in-mass/2408052/

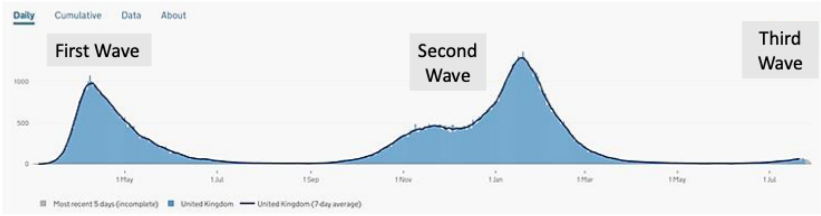
[8] https://rumble.com/vkba8x-update-from-sydney-all-new-covid-hospitalizations-involve-vaccinated-indivi.html

Figure 1: Cases reported by date in the UK



The three waves of the COVID-19 pandemic in the UK are indicated on Figures 1 and 2.

Figure 2: deaths within 28 days of positive test by date of death in the UK



It is evident that the third wave caused by the delta variant was associated with far fewer deaths, and this would normally be considered to be the end of the pandemic.

U.K. Figures Source:
https://coronavirus.data.gov.uk/details/cases

Figure 3: Distribution of the SARS-CoV-2 variants and Covid-19 cases (blue line) in the U.K.

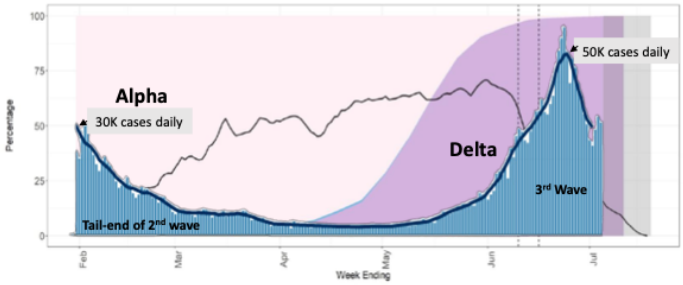


Figure 4: Distribution of the SARS-CoV-2 variants and Covid-19 deaths (blue line) in the U.K.

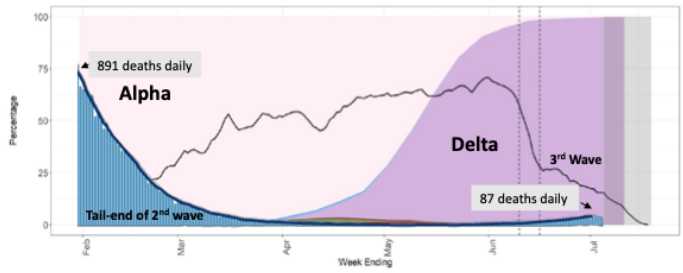


Table 1: Alpha and Delta deaths in the UK from February 1 – July 19, 2021

Variant	Age group (years)	Number of cases	Deaths
Alpha	<50	118082	66 (0.1%)
	≥50	32265	1548 (4.8%)
	All cases	150436	1614 (1.1%)
Delta	<50	205549	45 (0.0%)
	≥50	23379	415 (1.9%)

The Delta variant although more contagious is less pathogenic. Therefore, any further restrictions are not warranted. Life should go back to normal.

Table 2: Vaccination status among Delta confirmed cases in the UK as of July 19, 2021

	Age group (years)	Total	Unlinked	<21 days post dose 1	≥21 days post dose 1	Received 2 doses	Not vaccinated
Delta Variant	All cases	229,218	24,952	21,088	33,003	28,773	121,402
	<50	205,549	22,496	20,930	27,714	15,346	119,063
	≥50	23,379	2,169	157	5,289	13,427	2,337
Number of Deaths	All cases	460	6	5	60	224	165
	<50	45	1	3	3	4	34
	≥50	415	5	2	57	220	131

Unlinked: Not associated with a vaccinated status (i.e. unknown)

Source :
https://www.gov.uk/government/publications/investigation-of-novel-sars-cov-2-variant-variant-of-concern-20201201

The current mRNA vaccines do not appear to be effective against the Delta variant, or reduce the mortality rate. Therefore, why should there be the need for vaccination passports of any kind?

4. Natural vs Vaccine-Induced Immunity

The COVID-19 vaccines currently available under Interim Order in Canada are mRNA vaccines that stimulate our bodies to produce a version of the spike protein part of the virus.

The spike protein is only one of 28 proteins of the SARS-CoV-2 virus. As vaccines induce immunity only to the spike protein, the immunity is narrow spectrum, meaning that this type of vaccine is less protective against mutations or variants. Moreover, the vaccines code for the spike protein from the original Wuhan strain of SARS-CoV-2 virus, which does not circulate anymore and which has been long replaced by newer variants. This has been suggested to be a concern, because should a mutation occur in the spike protein, some spike-antibodies may no longer be able to strongly attach making them less effective in mounting an immune response. However, vaccinated individuals do generate many different antibodies against the spike protein, so a substantial part of the immune recognition will still be retained even with variants of concern like the Delta strain.

By contrast, a natural infection creates broad spectrum immunity as antibodies are created to all parts of the virus. This makes natural immunity less likely to be affected by mutations. In fact, antibodies to the natural virus and other common cold coronaviruses can offer complete protection against SARS-CoV-2 infection. This is likely why most people that are infected with SARS-CoV-2 are asymptomatic or have very mild symptoms.

According to this study, just released from Israel, one of the most vaccinated countries in the world, natural immunity is superior to vaccine immunity. In fact, vaccinated individuals had a 13x greater chance of contracting the Delta Variant vs. those with naturally acquired immunity, a 7x greater risk of symptomatic disease, and a greater risk for hospitalization. Calls for mandatory vaccination or repeated PCR-based tests for the presence of SARS-CoV-2 RNA completely disregards the existence of of natural immunity that is already prevalent in our population.

https://www.medrxiv.org/content/10.1101/2021.08.24.21262415v1.full.pdf

5. Adverse Reactions to the Vaccines and Particular Risks to Flight Crews

When COVID-19 first emerged, it was widely considered a respiratory disease. But as researchers from around the world have further studied the true nature of the disease, they came to realize that COVID-19 is also characterized by extensive internal inflammation and clotting. Now, over a year later, researchers have also discovered that the role of the spike protein is much more than just enabling the virus to infect the cell, rather, it has numerous toxic effects in the body. Some of this toxicity is caused by the interaction of the spike protein with the ACE-2 receptor on the surface of many cell types, including platelets.

https://www.ahajournals.org/doi/10.1161/CIRCRESAHA.121.318902

This is problematic, because there are numerous ACE-2 receptors in the blood vessels, brain, heart, liver, kidneys, eyes, and many more parts of the body. The problem lies in the fact that the spike protein makes these normally smooth surfaces rough as they become coated with the SARS-CoV-2 virus particles, which can make them prone to developing clots.

Both the Moderna and Pfizer vaccines use the spike protein part of the virus. Their mRNA technology, which has never been effectively deployed before in a vaccine, gives your body the instructions to produce billions of copies of the spike protein. In essence, the most dangerous part of the SARS-CoV-2 virus is being made by your own body. The adverse reaction databases are already showing overwhelming instances of clotting and bleeding disorders. Deep vein thrombosis (DVT) and pulmonary embolisms (PE) are already acknowledged issues with sitting on long duration airplane flights for more than 4 hours.

The COVID-19 vaccines that are currently available in Canada have been approved under Interim Order meaning that they are still largely experimental. The reviews are rolling, meaning data are reviewed as they become available. The Phase 3 trials for the vaccines are ongoing until at least 2023. Data must be collected for 2 years for all Phase 3 trial participants, starting from 2 weeks after administration of the second dose. As such, we do not and cannot yet have the long-term safety data from these vaccines. Theoretic risks such as the development of autoimmune diseases are of serious concern in view of the way the mRNA and adenovirus vaccine work. These vaccines illicit inflammatory attacks by cells of the immune system against the cells that produce the spike protein in order to stimulate more specific antibody responses.

The fact that billions of doses have been administered worldwide is NO SUBSTITUTE for LONG-TERM data on safety and effectiveness. The fact that we don't yet know the long-term effects of these vaccines doesn't mean that they don't exist. Absence of evidence is not evidence of absence. Furthermore, some adverse effects may manifest only later as was the case with the Pandemrix vaccine and increased risk of narcolepsy in children.

In the short term, numerous points of data from adverse event reporting systems around the world are logging hundreds of thousands of adverse events including tens of thousands of deaths.

In the United Kingdom, the Yellow Card adverse events database has been analysed by esteemed international data analyst Dr. Tess Lawrie, Director of the Evidence-based Medicine Consultancy Ltd and EbMC Squared CiC. She stated that due to the extent of the reported adverse events there is an "urgent need to communicate information that should lead to cessation of the vaccination roll out while a full investigation is conducted" as she concluded "The existing Yellow Card data covering just under a five-month period indicate that the extent of morbidity and mortality associated with the COVID-19 vaccines is unprecedented."

The US VAERS database has received an unprecedented number of reports, many of which are severe, life-altering, or fatal. As of August 6, 2021, VAERS has recorded 12,791 deaths, 51,242 hospitalizations, 16,044 permanent disabilities, 4,371 cases of myocarditis, 5,590 heart attacks, 1,505 miscarriages and more. It is noteworthy that more than a third of all reported vaccine injuries in the last 30 years has been documented with the three COVID-19 vaccines available in the US in the less than a year.

http://medisolve.org/yellowcard_urgentprelimreport.pdf?fbclid=IwAR1k77rN0K-7pcCaQ7A4heGucozyaz_JXL5ctl-wWfEtbx8kVFVLCbgUC3w

In the European Union, as of August 15, 2021, EudraVigilance (which gathers adverse event reports from 27 EU member states out of a total of 50 countries in Europe) has recorded[9] 20,595 deaths and 1.96 million vaccine injuries (of which 50% are serious in nature). Comparison of adverse drug reactions among four COVID-19 vaccines in Europe using the EudraVigilance database indicted the following regarding thrombosis at unusual sites, (August 2021): "This report[10] on EudraVigilance data strengthens anecdotal findings on CVT [cerebral vein thrombosis] following COVID-19 vaccinations."

Many other scientists, both in Canada and around the world, have expressed concern regarding the potential development of antibody-dependent enhancement (ADE) in vaccinated individuals.[11] ADE typically results in serious illness and even death by allowing the virus to more easily replicate in a person who has produced non-sterilizing antibodies (antibodies that do not destroy the virus). A study[12] published on August 9, 2021 in the Journal of Infection confirmed ADE with the delta variant and the presence of infection-enhancing antibodies in symptomatic COVID-19. ADE is a well-known phenomenon that has been previously reported with several different viruses, including coronaviruses like SARS-CoV-1 and MERS, and has hindered vaccine development in the past.

We must remember that these vaccines have been administered for less than a year, we therefore have no way to know the long-term effects including, but not limited to, fertility issues, cancers, and autoimmune disorders.

Thrombosis

Thrombosis events have always been of particular concern to flight crews. Extended periods spent sitting, combined with pressurizations and de-pressurizations, put flight crews at a higher risk of clotting events when compared to the general population.

Combine this with the extensive evidence (as presented in the list below) of increased risk of clotting and bleeding disorders associated with the current vaccines, and it becomes apparent that the risk of serious events from the vaccines far outweigh the benefit that they actually confer.

1) In early 2021, Canadian physician Dr. Charles Hoffe discovered that several of his patients were being harmed by the Moderna vaccine. Through D-dimer testing, Dr. Hoffe discovered that 62% of his post-vaccinated patients showed elevated D-dimer levels, which are associated with signs of micro-clotting, a potentially very serious condition whose long-term effects are yet to be determined.

[9] https://www.winterwatch.net/2021/08/20595-dead-1-9-million-injured-50-serious-reported-in-european-unions-database-of-adverse-drug-reactions-for-covid-19-shots/

[10] https://pubmed.ncbi.nlm.nih.gov/34375510/

[11] ADE occurs when the antibodies generated bind to a pathogen but are unable to prevent infection. Instead, these antibodies act as a "Trojan horse," allowing the pathogen to enter cells, worsening the disease in persons already exposed to the virus through a previous infection or vaccination.

[12] https://pubmed.ncbi.nlm.nih.gov/34384810/

2) On July 12, 2021, the U.S. FDA identified 4 adverse events of interest related to the use of the Pfizer vaccine using MediCare real-time surveillance (Initial Results of Near Real-Time Safety Monitoring of COVID-19 Vaccines in Persons Aged 65 Years and Older | FDA):
    a) Immune thrombocytopenia
    b) Pulmonary embolisms
    c) Myocardial infarctions
    d) Disseminated intravascular coagulation.

3) In a very large study carried out in Spain[13], it was determined that the Pfizer vaccine was associated with significant increases in the risks of venous thromboembolism and thrombocytopenia relative to historic rates. Although risks of these events also were significantly greater following COVID-19 infection relative to historic rates, there are 2 critical issues:
    a) Vaccination and infection are not mutually exclusive: It is clear that, with the original Wuhan strain of the virus in circulation (which is no longer the dominant strain), and with "fresh" immunity, the Pfizer and Moderna vaccines seemed really efficacious at stopping transmission. Now, it is clear that breakthrough infections are very common, given that (i) the vaccines do not cause sterilizing immunity, (ii) immunity wanes over time, and (iii) new variants can evade the vaccines. Thus, what is the risk of venous thromboembolic events or thrombocytopenia if someone is **both** vaccinated and infected with SARS-CoV-2? And add to this profession where risk of thromboembolic events is already increased, such as in airline crews.

    b) With vaccinations, there is 100% certainty of introducing the spike protein that is known to be associated with clotting and bleeding events into the body. However, with the proper use of PPE, handwashing and social distancing measures, the risk of acquiring COVID-19 can be minimized. In case of developing the disease, negative health impact can be minimized with an early treatment.

3) Other studies[14] also have reported thromboembolic events for the mRNA vaccines (e.g., study from Sweden using VigiBase).

4) Below is the incidence count of the following symptoms from the Vaccine Adverse Event Reporting System (VAERS) related to clotting events:
    a) Thrombosis or thrombus: 4,246
    b) Embolism/embolus: 1,857
    c) Infarction: 1,863
    d) Ischaemia: 902
    e) Occlusion: 370

Bottom line:

- Flight is well known to increases risk of thromboembolic events.
- Vaccination with the current COVID-19 vaccines is well known to increase risk of thromboembolic events.
- Infection with SARS-CoV-2 increases risk of thromboembolic events to a greater degree than vaccination; BUT, as the vaccines do not provide sterilizing immunity, vaccination and infection can occur concurrently, and potentially compounding the risk of thromboembolic events compounded.

[13] https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3886421

[14] https://erj.ersjournals.com/content/58/1/2100956

The fact that a person can still be infected with the SARS-Co2 virus while being fully vaccinated leads to the possibility of combining and compounding the risks of clotting and bleeding events. Now add to this the additional risk of clotting events associated with the flight crew occupations, and it becomes apparent that requiring flight crews to be vaccinated can put them at a much higher risk of a clotting event.

If flight crews suffered any of these very serious clotting or bleeding events while they were operating a flight, the consequences to passenger safety could be disastrous.

6. Vaccines are Not the Only Option. Very Effective Prevention & Treatment Options are Available

With an ever-growing list of published, peer-reviewed clinical trials, the evidence is overwhelming that COVID-19 is a treatable and largely preventable illness. Physicians and scientists have come to understand many aspects of the immune response and the phases of the illness caused by SARS-CoV-2. They are able to tailor effective prophylactic and treatment therapies to the specific underlying process at each phase so as to prevent hospitalization, ICU admission, and death.

The goals of treatment are not only to stop one from developing COVID-19, but to prevent the progression through to the severe stages of the disease. Scientific Studies[15] have shown that multidrug early treatment with combinations of repurposed drugs and nutraceuticals prevents this progression to critical disease.

Since March 2020, numerous studies[16] relating to early treatment of COVID-19 demonstrate the effectiveness and safety of using repurposed drugs, such as Ivermectin, Hydroxychloroquine, Fluvoxamine, Colchicine, Budesonide and others, to stop viral replication and prevent long-haul symptoms.

For example, the inhaled steroid budesonide has already been included in several treatment guidelines (UK, British Columbia, New Brunswick). Moreover, the biggest outpatient trial has been the Canadian COLCORONA trial[17] that showed positive effects of a well-known drug colchicine on decreasing hospitalizations and deaths.

A meta-analysis[18] of Ivermectin published in the American Journal of Therapeutics on June 21, 2021 concluded: “Moderate-certainty evidence finds that large reductions in COVID-19 deaths are possible using ivermectin.

Using ivermectin early in the clinical course may reduce numbers progressing to severe disease. The apparent safety and low cost suggest that ivermectin is likely to have a significant impact on the SARS-CoV-2 pandemic globally.”

[15] https://www.cureus.com/articles/63131-ivermectin-as-a-sars-cov-2-pre-exposure-prophylaxis-method-in-healthcare-workers-a-propensity-score-matched-retrospective-cohort-study

[16] https://c19early.com

[17] https://www.sciencedirect.com/science/article/pii/S2213260021002228?via%3Dihub

[18] https://pubmed.ncbi.nlm.nih.gov/34145166/

Physicians around the world are successfully managing COVID-19 in the outpatient setting using a variety of treatment and preventative protocols. The common message amongst them all is that treatment is most successful when initiated early.

7. The Elements of Informed Consent and Coercion

The vaccines that are currently authorized in Canada under Interim Order are still considered investigational, therefore they are subject to the "Directives for Human Experimentation".

The Nuremberg Military Tribunal's decision in the case of the United States v Karl Brandt *et al.* includes what is now called the Nuremberg Code, a ten-point statement delineating permissible approaches to medical experimentation on human subjects. According to this statement, humane experimentation is justified only if its results benefit society and it is carried out in accord with basic principles that "satisfy moral, ethical, and legal concepts."

According to the Nuremberg Code:

"The voluntary consent of the human subject is absolutely essential. This means that the person involved should have legal capacity to give consent; should be situated as to be able to exercise free power of choice, **without the intervention of any element of force, fraud,** deceit, **duress, over-reaching, or other ulterior form of constraint or coercion**, and should have sufficient knowledge and comprehension of the elements of the subject matter involved as to enable him to make an understanding and enlightened decision. This latter element requires that before the acceptance of an affirmative decision by the experimental subject, there should be made known to him the nature, duration, and purpose of the experiment; the method and means by which it is to be conducted; **all inconveniences and hazards reasonably to be expected; and the effects upon his health or person which may possibly come from his participation in the experiment.** The duty and responsibility for ascertaining the quality of the consent rests upon each individual who initiates, directs or engages in the experiment. It is a personal duty and responsibility which may not be delegated to another with impunity." http://www.cirp.org/library/ethics/nuremberg/

The Supreme Court decision of Her Majesty the Queen v Steven Brian Ewanchuk states that consent must be "freely given". Consequently, if a person is fearful of losing his/her job, education or ability to travel, and is, therefore, being coerced to be vaccinated, consent is not freely given. The decision[19] states: "As enumerated in **[the Criminal Code],** these include submission by reason of force, fear, threats, fraud or the exercise of authority, and codify the longstanding common law rule that **consent given under fear or duress is ineffective**." "Authority" in this case could be the government (i.e., not permitting travel) or one's employer.

Coercion is present if an individual is threatened with job loss if they do not get vaccinated. The employer is over-reaching into the domain of medical autonomy and is applying duress to force their employee to concede to something that they do not want. Some legal experts have opined that forcing someone to take a vaccine also constitutes assault. https://rumble.com/vk8otq-dont-talk-tv-episode-51-vaccine-passports-coercive-and-unconstitutional.html

Given all the uncertainties about the risk of thromboembolic events following vaccination, coupled with the limited data on risk in professions wherein risk is already increased (e.g., flight crew) and the limited data on how vaccine evasion by variants further compounds this risk, consent is not given. And

[19] https://scc-csc.lexum.com/scc-csc/scc-csc/en/item/1684/index.do

it is a person's right, according to the Helsinki declaration[20], to refuse to consent, without fear of reprisal.

8. Conclusions

The Union has been presented with the following arguments (which are not exhaustive) that have been substantiated with evidence-based science:

1. The spike protein causes inflammation and blood clotting and bleeding injuries to the body.
2. The spike protein is found in the COVID-19 virus and in all of the vaccines currently authorized under Interim Order in Canada.
3. Both the Moderna and Pfizer vaccines use the spike protein part of the virus. Their mRNA technology, which has never been effectively deployed before in a vaccine, gives your body the instructions to produce billions of copies of the spike protein. In essence, the most dangerous part of the SARS-CoV-2 virus is being made by your own body. The adenovirus-based vaccines also result in the similar presentation of spike protein on the surface of the body's cells.
4. The adverse events databases from around the world are reporting unprecedented numbers of adverse events from these vaccines including clotting and bleeding disorders, and death.
5. Flight crews are already prone to more clotting events than the general population.
6. The current vaccines provide a narrow band of protection and are showing in studies to be ineffective against variants of concern. In other words, vaccinated people can still catch and transmit the virus.
7. A study from Israel, one of the most vaccinated countries in the world, shows that vaccinated people have a 13x greater risk of contracting the Delta Variant, a 7x greater risk of symptomatic disease, and a greater risk for hospitalization.
8. If someone is vaccinated (increasing their risk of clotting and bleeding), but then catches the virus (increasing the risk of clotting and bleeding), and is a pilot (increasing their risk of clotting and bleeding), are all of these risks cumulative?
9. The current vaccines have an absolute risk reduction of less than 1%.
10. For people under age 65 (the average working population) the risk of dying from COVID-19 is less than 0.6%. There is a greater risk of dying in a car accident driving to work than dying from COVID-19.
11. If the risk of death in the working population is less than 1% and the absolute benefit conferred from the vaccines is less than 1% vs an unvaccinated person, then the risk to benefit analysis would indicate that vaccination is not warranted.
12. There are numerous options available to prevent and treat COVID-19 at all stages of the disease. It is false to assume that none exist and therefore vaccination is the only option.
13. These vaccines are still in Phase 3 trials; therefore, they are governed by the "Directives for Human Experimentation". These directives dictate that participation must be voluntary and that consent must not be coerced or made under duress. The threat of loss of one's job constitutes duress and coercion.

[20] https://www.wma.net/what-we-do/medical-ethics/declaration-of-helsinki/

14. The Union has a legal obligation referred to as the Union's *duty of fair representation* of the members' interests.
15. Section 37 prohibits Unions from acting in an arbitrary or discriminatory manner or in bad faith when representing employees under the applicable collective agreement.

The Union needs to prove they are not acting in an arbitrary manner by facetiously negating these concerns without considering their merit or the weight of evidence in their favour.

9. Table of Footnotes

[1] https://srhd.org/news/2021/coronavirus-mutations-and-variants-what-does-it-mean

[2] https://www.nature.com/articles/s41579-021-00573-0

[3] https://www.medrxiv.org/content/10.1101/2021.07.31.21261387v4

[4] https://sfist.com/2021/07/27/cdc-confirms-that-viral-loads-in-vaccinated-people-with-delta-are-indistinguishable-from-unvaccinated/

[5] https://www.bbc.com/news/uk-57830617

[6] https://www.baltimoresun.com/opinion/op-ed/bs-ed-op-0804-breakthrough-covid-20210803-t32trfpiwzdf5okfar45f64whi-story.html

[7] https://www.nbcboston.com/news/local/nearly-4000-breakthrough-covid-infections-have-now-been-reported-in-mass/2408052/

[8] https://rumble.com/vkba8x-update-from-sydney-all-new-covid-hospitalizations-involve-vaccinated-indivi.html

[9] https://www.winterwatch.net/2021/08/20595-dead-1-9-million-injured-50-serious-reported-in-european-unions-database-of-adverse-drug-reactions-for-covid-19-shots/

[10] https://pubmed.ncbi.nlm.nih.gov/34375510/

[11] ADE occurs when the antibodies generated bind to a pathogen but are unable to prevent infection. Instead, these antibodies act as a "Trojan horse," allowing the pathogen to enter cells, worsening the disease in persons already exposed to the virus through a previous infection or vaccination.

[12] https://pubmed.ncbi.nlm.nih.gov/34384810/

[13] https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3886421

[14] https://erj.ersjournals.com/content/58/1/2100956

[15] https://www.cureus.com/articles/63131-ivermectin-as-a-sars-cov-2-pre-exposure-prophylaxis-method-in-healthcare-workers-a-propensity-score-matched-retrospective-cohort-study

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[18] https://pubmed.ncbi.nlm.nih.gov/34145166/

[19] https://scc-csc.lexum.com/scc-csc/scc-csc/en/item/1684/index.do

[20] https://www.wma.net/what-we-do/medical-ethics/declaration-of-helsinki/