

An open letter in response to vaccine concerns and misinformation

October 1, 2021

We understand it is a stressful time with a wide range of opinions on the current COVID-19 situation in Alberta. However, Alberta Health Services (AHS), the Alberta Medical Association (AMA), the College of Physicians & Surgeons of Alberta (CPSA), the Cumming School of Medicine (UofC), and the Faculty of Medicine & Dentistry (UofA) believe it is extremely important for all Albertans to have correct, trustworthy and updated information about COVID-19, so they can make informed choices and protect themselves and loved ones.

As Alberta's hospitals are filling up with critically-ill patients and there are increasing deaths due to COVID-19, we felt it was our responsibility to address recent letters and social media content containing misinformation, disinformation, and data or information taken out of context, such as a letter addressed to CPSA Council and an open letter to AHS signed by a group of nurses and physicians. This type of misinformation spreads incorrect, dangerous beliefs and ignores our growing, improving scientific evidence base, developed by scientists, physicians, public health experts and researchers from across the globe.

We continue to see a parallel epidemic of misinformation and conflicting opinions from various "experts" spreading across social and digital media who do not have relevant expertise. Meanwhile, unvaccinated people are being infected, being hospitalized and are dying of COVID-19, which is a largely preventable infection. Misinformation is delaying pandemic control and threatening both our pandemic response, and our ability to function as a cohesive society. [Infodemic \(who.int\)](https://www.who.int/infodemic)

There is overwhelming evidence that COVID-19 vaccines, which are approved for use by Health Canada, are effective and safe, and the risk of not being vaccinated is far greater than the very small risk of any potentially severe side effects related to the vaccine. We hope the following information provides a starting point for healthcare providers and Albertans, to have meaningful, fact-based conversations about COVID-19 vaccines. **Current evidence supports that vaccines are proven to be effective at preventing infection, even with the Delta variant, and are especially useful in preventing severe outcomes such as the need for hospitalization and/or death.**

The COVID-19 vaccines are effective and their safety has been conclusively demonstrated. The Health Canada-approved vaccines for the prevention of COVID-19 are proven to be effective at preventing infection, even against the Delta variant, and are especially useful in preventing severe outcomes such as the need for hospitalization and/or death. Vaccines have maintained their effectiveness in the real world: in our own province, over 85% of those hospitalized with COVID-19 are unvaccinated, and as of September 30, 2021, 90.6% of the people in intensive care units (ICUs) with COVID-19 are unvaccinated or only partially vaccinated. Our healthcare teams tell us the fully vaccinated who get severely ill are often immunocompromised, medically complicated, or very elderly.

The studies that show vaccine effectiveness are high-quality, large, consistent and have been reviewed by experts in great detail. Currently, the amount of data on safety and effectiveness of vaccines is much greater than the data supporting most medical treatments and builds on many years of scientific development before COVID-19. Over 3.5 billion

people have received at least one dose of a COVID-19 vaccine globally and over 6.2 billion doses have been given.

In addition, significant [safety signals](#) identified through self-reported systems are evaluated by researchers. Many health agencies and advisory groups have independently analyzed the findings and support vaccination against COVID-19, including the [Public Health Agency of Canada \(PHAC\)](#), the [Canadian National Advisory Committee on Immunization \(NACI\)](#), the American [Centers for Disease Control and Prevention \(CDC\)](#) and [Advisory Committee on Immunization Practices \(ACIP\)](#), the [World Health Organization \(WHO\)](#), the [European Center for Disease Control \(ECDC\)](#), and other globally-recognized sources of reputable information. It must also be said our hospitals and ICUs are full of people ill with COVID-19 infections, not patients with vaccine-related issues.

Locally, [Alberta Health](#) and [Alberta Health Services \(AHS\)](#) provide current information for health professionals and patients. AHS' [COVID-19 Scientific Advisory Group](#) develops Rapid Evidence Briefs to answer questions using evolving best evidence, and to provide recommendations to health professionals.

According to the CDC, multiple studies from the United States and other countries have demonstrated that two doses of COVID-19 mRNA vaccines are effective against COVID-19 infection (including both symptomatic and asymptomatic infections) caused by ancestral and variant strains. They are also effective in protecting against severe disease, hospitalization, and death.

As of September 29, 2021, there had been over 27,000 deaths from COVID-19 in Canada. The death rate was higher in pre-vaccine times than now, but overall mortality is 1.7% from known cases. Death is not the only outcome of importance, as there are healthy young people experiencing long-term, post-COVID conditions after COVID-19 infection and after complicated hospital stays, in addition to the societal disruption communities are experiencing. This disease is having both direct and indirect tragic and devastating consequences for Albertans.

While the vaccines are proving to be excellent protection against severe infection, hospitalization and death, no vaccine is 100% effective. Some vaccinated people may be infected, but in most cases, any illness manifestations are relatively minor. Even though this happens rarely, a small fraction of an increasingly large number can look like a lot of post-vaccine infections as we try to vaccinate most of the population. This does not mean vaccines do not work, and as we increase the numbers vaccinated in our communities, the overall amount of COVID-19 infections in the community will drop. This will help protect people with immune and other health conditions who may not have full protection after full vaccination, and protect children who cannot yet be vaccinated. **The vaccines significantly decrease the chance that an immunized person will get COVID-19 and that in turn reduces the risk of infections for Albertans overall.**

What we know about vaccines preventing transmission:

Current evidence supports that vaccines reduce the risk of transmission of COVID-19 to others.

Current evidence does not support that vaccines don't prevent transmission, so there is no point in getting them.

The understanding of risk of transmission, how much active virus is carried for how long and how much spread happens from vaccinated people is increasing, and information will be changing. Currently, studies (even of the Delta variant) support that transmission risks are lower when individuals and communities are immunized.

The risk for COVID-19 infection in fully-vaccinated people cannot be completely eliminated as long as there is continued community transmission of the virus, because no vaccine is 100% effective. However, data show fully-vaccinated persons:

- are less likely than unvaccinated persons to acquire COVID-19 infection (including the Delta variant); and
- show reduced transmission to others

Variants of concern (VOC) began to emerge through natural processes well before vaccination programs began. Highly-vaccinated communities have less viral transmission and will be less likely to have VOC emerge.

Current evidence does not support that vaccination is driving the emergence of VOC.

All viruses evolve and mutate over time. The [major variants](#) of COVID-19 (alpha, beta, gamma and delta) were found between May and November 2020, well before community vaccination started, but ongoing transmission helped some of these variants become dominant because they are more transmissible and “outcompeted” the others. Vaccination will reduce both spread and the opportunity for new VOCs to become dominant. The best way to protect against new variants emerging is to control the spread of the virus. One of the primary ways we have to do that is through immunization.

Current evidence supports that vaccine protection is excellent, especially against severe outcomes, and does not come with the current 1-in-20 risk of hospitalization with documented COVID-19 infections in Alberta. There is no strong, real-world evidence that COVID-19 survivors have better immune protection than vaccinated people.

Current evidence does not support that infection-acquired immunity has been found to be stronger than vaccine immunity.

Immunity from infection comes at MUCH higher risk than immunity from COVID-19 vaccination. Of those Albertans that are diagnosed with COVID-19, about 1 in 100 will die from the disease, while many others will experience life-changing complications such as prolonged pneumonia, lung damage and blood clots. The risk of death is significantly higher in infected persons who are unimmunized compared to those who are immunized. It is expected that COVID-19 will eventually infect nearly all nonimmune people, much as chickenpox did in past years, but with more risk of severe illness and death.

There is emerging evidence that amongst those who survive a COVID-19 infection, acquired immunity from previous infection has been found to be around 85% protective against symptomatic reinfection. How long immunity lasts after infection is not yet known, and some VOCs seem to be able to re-infect people with previous infection. Researchers in Israel found that if someone had a previous infection, they were twice as likely to be re-infected with the delta variant compared to those who had previous infection plus a dose of vaccine. Current studies show that vaccination after COVID-19 infection boosts immunity and offers more protection against the delta variant.

What we know about adverse events and long-term effects following vaccination:

Current evidence supports that we have very highly-monitored vaccine safety data for 16 months (since phase 2 trials), as well as significant experience with similar vaccine platforms from before COVID-19. There are no reasons to believe that current COVID-19 vaccines should have long-term effects as they cannot alter cell genetic material - they just teach your body to recognize the code of the virus, then disappear.

The statement that long-term safety is not established is misleading.

[Extremely robust data](#) from clinical trials and real-world use in many millions of people show that COVID-19 vaccination has demonstrated safety. It is true that rare serious events may occur after vaccinations and this is the reason there are established sensitive and robust safety surveillance systems used in many countries, including Canada. The surveillance systems monitor for any potential safety signals or side effects, so they can be investigated further. It is very important to understand that not all reported events are related to, or caused by, the vaccine, as they are self-reported and all health events that might happen at any time are now happening after vaccination in a large portion of people, as most adults are getting vaccinated. That is why these reporting systems have to be looked at and compared to expected health events in a population.

Current evidence supports that people have seen serious adverse effects following vaccination, but serious adverse events are relatively rare, and the overall risk of COVID-19 infection and its serious outcomes is much higher.

The Public Health Agency of Canada (PHAC) monitors the safety of vaccines in Canada through the [Canadian Adverse Events Following Immunization Surveillance System \(CAEFISS\)](#) – similar to the Vaccine Adverse Event Reporting System (VAERS) that is used in the United States. CAEFISS tracks adverse events on an ongoing basis and makes the information publicly available.

The [Government of Alberta](#) also produces a weekly report of the side effects following COVID-19 vaccination in Canada. As of September 17, 2021, about 54.8 million doses were administered to Canadians – and there have been about 16,000 reports of adverse events, representing 0.029% of all doses administered. Furthermore, of those who experienced adverse events, just over 4,000 were considered serious, representing only 0.008% of all doses administered.

More information about Canada's monitoring of COVID-19 vaccine safety is available [here](#). Vaccine monitoring has historically shown that side effects generally happen within six weeks of receiving a vaccine dose. In addition, 90% of the vaccine remains at the injection site, and at all sites in the body, the vaccine, including both the mRNA and the lipid nanoparticle components, are cleared from the body within a few days. To date we have more than a year of outcome data related to vaccines and have seen no indication of very late adverse events.

Over 6.2 billion doses of the COVID-19 vaccines have been administered globally, and over 50 million in Canada alone. To date, we have more than a year of outcome data related to vaccines and have seen no indication of very late adverse events. **The best way to protect yourself, your loved ones, and your fellow Albertans against COVID-19 infection is to get vaccinated.**

What we know about vaccine safety:

Current evidence supports that mRNA vaccines have been in development for many years, are fully approved with more data than most treatments and vaccines, and have not been considered “experimental” since December 2020. *Current evidence does not support that the mRNA vaccine is “experimental”.*

COVID-19 vaccines are not experimental.

- While COVID-19 vaccines were developed rapidly, [all steps have been taken to ensure their safety and effectiveness](#).
- Both the mRNA COVID-19 vaccines and the viral vector COVID-19 vaccines were developed using scientific knowledge that has been known and improved for decades.
- The current COVID-19 vaccines in Canada have been extensively tested in the usual clinical trials that one expects for all new vaccine products, but the work was expedited due to the pandemic emergency. The following factors and collaborations contributed to the fast development of these life-saving vaccines:
 - Streamlined timelines of phases of trials so portions of phase 1,2,3 were done in tandem in some instances instead of one after the other.
 - High infection rates in many communities as well as many volunteers for these studies meant that comparing infection rates in large numbers of vaccinated and unvaccinated people could occur in months rather than in years. There was collaboration to fund studies and improve efficiency of approvals.
 - Interim results from trials were submitted to regulators and advisory committees as soon as they had been verified. This allowed the data to be reviewed as soon as possible, avoiding the usual delays associated with waiting until each trial was complete. Manufacturing of vaccine doses began early while the clinical trials were still running, rather than waiting until the trials were completed and the vaccines were approved. This allowed doses to be ready if the data showed safety and effectiveness.
- All of the vaccines being used in Canada have been fully approved by Health Canada (the regulatory agency). Extensive testing and monitoring have shown that these vaccines are safe and effective.
- [Extremely good data](#) from clinical trials and real-world use in many millions of people show that vaccination is safe, and offers good protection against becoming infected and excellent protection against serious illness or death from COVID-19.
- Over 6.2 billion doses of COVID-19 vaccines have been administered worldwide, including over 50 million doses given in Canada alone.
- COVID-19 vaccine safety monitoring is occurring, using well-established international vaccine safety surveillance systems. There have also been newly-added safety monitoring systems such as the American V-safe program.

What we know about the vaccine and pregnancy, breastfeeding and fertility:

Current evidence supports that all data so far shows that COVID-19 vaccines are safe and effective in pregnancy and breastfeeding, and do not have any effect on people's ability to have children. Right now, hospitals are seeing increasing numbers of critically-ill pregnant people with Delta variant COVID-19 with pregnancy losses and deaths.

Current evidence does not support that the vaccine is unsafe for use in pregnancy and breastfeeding.

There is strong evidence to support the use of the vaccine in pregnancy and breastfeeding. Pregnancy outcomes have been registered and followed since the initial vaccine trials and through early vaccination of healthcare workers and the general population.

Pregnant patients with COVID-19 [are more likely to need intensive care](#) and die. Preterm birth and stillbirth are more common in unvaccinated pregnant patients with COVID-19 and their babies are more likely to need neonatal care in the hospital. The best thing you can do to protect yourself and your baby is to get vaccinated.

Current evidence supports that the vaccine does not reduce fertility.

Medical experts have not found anything to support a social media claim that the COVID-19 vaccine [could reduce fertility](#). Confusion around this issue started with a false social media-based report that was circulated, saying that the spike protein on this coronavirus was the same as another spike protein called “syncytin-1” that is involved in the growth and attachment of the placenta during pregnancy. The false report said that getting the COVID-19 vaccine would cause a woman’s body to fight this different spike protein and affect her fertility. However, the two proteins are completely different, and getting the COVID-19 vaccine will not affect the fertility of women who are seeking to become pregnant. In fact, numerous pregnancies occurred during vaccine clinical trials and during vaccine rollout, as seen in the pregnancy registry data.

Since then, the issue of fertility was studied in various ways and found that:

1. COVID-19 vaccines [did not damage placentas](#) in vaccinated women.
2. COVID-19 vaccines [do not affect sperm production](#) and therefore male fertility (but COVID-19 the disease does).
3. COVID-19 vaccines [were not associated with increased miscarriages, preterm births or stillbirths](#).

What we know about COVID-19 and children/youth:

Current evidence supports that children need protection from COVID-19.

Current evidence does not support any statement questioning the need for vaccine or public health measure-based protection of children and youth because they are at low risk of hospitalization or death is missing several important points. Reducing community transmission and vaccinating eligible adults and youth protects both the children who cannot become immunized yet from rare but severe outcomes, and the larger community that surrounds children.

Children can be at risk of [multisystem inflammatory syndrome \(MIS-C\)](#) following infection with COVID-19. While relatively rare, it is a serious condition. We do see some hospital admissions and critical illness in children and unvaccinated youth because the numbers of infections are so high that rare events become visible.

Indirect consequences of the pandemic, including the impact of school shutdowns and loss of other activities during periods of high transmission, can have many negative consequences for children and can disproportionately affect marginalized groups.

Vaccination of all eligible people along with other measures will reduce transmission and let children and youth have more full educational and life experiences again.

It's also important to note that no child stands alone. Children are connected to parents, caregivers, teachers, grandparents, friends, immunocompromised, doctors and nurses, therapists, unvaccinated communities, and more. Risk is not equal across the spectrum of ages; the pandemic has highlighted our connectivity to each other. Vaccination allows us to protect ourselves, our patients, our co-workers, our communities and our province.

In conclusion:

At this time, the existing evidence supports COVID-19 vaccination for everyone 12 years of age or older as the safest choice for individuals and their loved ones and communities. The risks of vaccination are very low and must be compared to the much greater risk of becoming infected and requiring hospitalization, or potentially infecting others.

It is time for all Albertans to work together to protect ourselves and our communities, and support our healthcare systems.

Our duty as healthcare professionals is to provide the best care and advice possible for our patients, and our duty as community members is to act with care and concern towards our fellow Albertans. This includes confirming that information is reliable before sharing it, and recognizing dangerous misinformation and helping stop its spread. Over 1,000 Albertans are in hospital with severe COVID-19 and an average of 15-20 people are dying daily in the fourth wave: misinformation is deadly.

Acquiring COVID-19 is much more dangerous than getting the vaccine, which is proven to be safe and effective in billions of people. In addition to protecting us from illness, death, and disabling long-term health effects, immunization against COVID-19 helps protect our families and patients.

We strongly support healthcare workers in their continuing efforts to listen to patients, provide them with reliable information, lead by example, and help Albertans find the path to making a decision to become vaccinated to protect themselves, our community and our province.

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