

Updated January 18, 2022

Alberta COVID-19 Immunization Program Update

Dear colleagues,

I am sharing this update with some important information about COVID-19 immunization.

In alignment with recommendations from the Alberta Advisory Committee on Immunization (AACI) and the National Advisory Committee on Immunization (NACI), the province is expanding eligibility criteria for a booster dose of the COVID-19 vaccine to immunocompromised individuals.

- Effective January 18, 2022, immunocompromised individuals 18 years of age and older who received a three-dose primary vaccine series are eligible for a booster dose (4th dose) at least five months following their third dose. Eligible Albertans may start booking their fourth dose booster starting January 20, 2022.
- For individuals with immunocompromising conditions, either Pfizer Comirnaty (30mcg) or Moderna Spikevax can be offered. If the Moderna vaccine is used as a booster dose, 100 mcg is the recommended dosing. If the individual requests to receive a lower dose (50mcg) or if in their clinician's opinion it may be better for them to receive a lower dose (50mcg), they can do so with informed consent.

More information on these changes is included in the updated document below.

Thank you for your efforts to support the COVID-19 immunization program through patient counseling, vaccine provision for those involved, and immunization for you and your teams.

Yours sincerely,

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Chief Medical Officer of Health

Alberta COVID-19 Immunization Program Booster Summary

Per [NACI's guidance on booster](#) COVID-19 vaccine doses in Canada, a booster dose provides individual benefit for those who may have waning immunity over time after receiving a primary series that may put them at increased risk of severe COVID-19 or transmitting the infection to vulnerable populations. It also provides a population benefit by adding an additional layer of protection against more transmissible emerging variants and transmission chains that could expose those with no protection.

Due to the increased risk of transmission of the Omicron variant, Alberta has updated the interval timing to offer a booster dose to any Albertan at a five-month interval, following the last dose in their primary series. While this may cause a slight reduction in long-term protection, there is a significant benefit both to the individual and to the community by providing boosters to more Albertans sooner during this critical time. It should be noted that the clinical recommendation from the National Advisory Committee on Immunization continues to be a minimum spacing of six months after the last dose of the initial vaccine series

AACI Clinical Recommendation:

Current evidence supports that a booster dose of COVID-19 vaccine offers important individual benefits for those who are at greater risk of developing severe illness or experiencing waning immunity. AACI strongly recommends a booster dose for those who are at highest risk of severe outcomes from breakthrough infection or who could pose an increased risk of transmission to vulnerable populations

The following populations who have received a complete primary series of COVID-19 vaccine are **clinically recommended** to take a booster dose of COVID-19 vaccine.

- Individuals (18 years of age and older) with select immunocompromised conditions who received a three-dose primary vaccine series.
- [Individuals \(18 years of age and older\) with an underlying chronic condition](#), who were prioritized for their primary vaccine series in phase 2 of the initial vaccine roll-out
- [Adults 40 years and older](#)

AACI Discretionary Recommendation:

A booster dose may be offered on a discretionary basis to younger adults who do not have an underlying chronic condition, as they are typically at lower risk for developing severe illness from COVID-19. However, there is a significant population benefit to enhancing overall protection to reduce general exposure risks, as there are many in the overall population who are completely unprotected.

- [Adults 18 to 39 years old](#) who do not have an underlying chronic condition

Overview

- Emerging evidence suggests that vaccine effectiveness of a full COVID-19 vaccine series against symptomatic infection from the Omicron variant is likely to be much lower than against earlier variants.
 - Emerging real world [data from the UK](#) suggests that Omicron has a significant negative impact on 2 dose vaccine effectiveness against infection.
 - Preliminary laboratory studies from [Pfizer](#) and [others, including the UK](#), showed that neutralization against Omicron variant after three doses of vaccine was comparable to the neutralization against the original strain after two doses.
 - Two doses of an mRNA vaccines series (Moderna and Pfizer-BioNTech) may still induce protection against severe disease with the Omicron variant, but more studies are required. Current early estimates are that two doses of mRNA vaccines are about 70% effective against severe disease with the Omicron variant compared with 95% or more against Delta.
 - A booster dose can restore some of the protection against infection with Omicron. A study from England noted vaccinated effectiveness against hospitalization was about 88% after a booster dose. Another study from the UK in those 65 years of age and over showed the booster was 94% effective against hospitalization within 2 to 9 weeks and 89% effective at 10 or more weeks.
- To continue protecting Alberta's most vulnerable populations and to maintain health system capacity, in alignment with recommendations from the Alberta Advisory Committee on Immunization (AACI), the province is expanding eligibility criteria for a booster dose of the COVID-19 vaccine and making booster doses eventually available to all those age 18 and over.
- Because vaccine supply is currently somewhat limited, the roll-out of boosters will begin with those who are 60 and older (based on birth date) and will expand to younger age groups as vaccine supply permits.
- While the risk of myocarditis and pericarditis following a dose of mRNA vaccine is rare, evidence for the primary series indicates that Moderna (Spikevax) COVID-19 vaccine has a slightly higher risk than the Pfizer-BioNTech (Comirnaty) vaccine. There is limited information about the risk following a third dose with the 50 mcg Moderna (Spikevax) vaccine. In the absence of evidence, the Pfizer-BioNTech (Comirnaty) vaccine may be offered as the preferred choice of mRNA COVID-19 vaccine in those aged 12 to 29 years as a booster dose. See [Clinical Considerations](#) for additional information.
- Current clinical evidence indicates that side effects reported after a third dose were similar to previous doses, and mostly mild or moderate. No increase in serious adverse events has been reported after administration of a third dose. Alberta will continue enhanced surveillance of adverse events following immunization (AEFI) and adverse events of special interest (AESI), including those related to booster doses of COVID-19 vaccines. Health care professionals have a critical role and mandated responsibility to report adverse events that meet Alberta's definition of an AEFI or AESI. For information

on what needs to be reported and when, go to:
<https://www.albertahealthservices.ca/info/Page16187.aspx>.

Booster doses

Recommendation:

- All adults 18 years of age and older are eligible for a booster dose of COVID-19 vaccine as supply allows at a minimum of a five-month interval from the last dose of their primary series, with a strong clinical recommendation for those age 40 and over and those with chronic health conditions that put them at risk for severe outcomes.

Note that Albertans 12 years of age and older with certain immunocompromising conditions have been recommended to be immunized with a primary series of three doses of an mRNA COVID-19 vaccine. See the [bulletin](#) for third/additional dose for high-risk individuals for more information. Albertans 18 years of age and older with certain immunocompromising conditions are eligible to receive a booster dose, which is the 4th dose for them.

Current evidence for those 40 and older:

- Age and underlying medical conditions are significant risk factors for severe COVID-19 disease outcomes such as hospitalization, ICU admission and death.
 - The proportion of individuals with at least one underlying medical condition associated with an increased risk of severe COVID-19 increases with age.
- Emerging evidence suggests that vaccine effectiveness against infection appears to wane with time, particularly in older adults.
- Among the fully immunized, older age groups (80 years and over, followed by those 70 to 79 years) have the highest hospitalization and mortality rates from breakthrough cases.
- Ongoing studies in Israel, the first country to vaccinate most of its population early in 2021, show that antibodies, especially in older people, begin to wane after 6 to 8 months. However, Israel used a shorter interval than Alberta between a first and second doses, which may impact immune response and duration.
- For current evidence related to an additional dose of mRNA COVID-19 vaccine following a primary series in seniors, please see this [U.S. government briefing](#).
- Among fully immunized individuals, those over 40 years of age have higher rates of severe disease outcomes from breakthrough infections than younger groups.
- Data on breakthrough infections and COVID-19 vaccine effectiveness in Alberta can be found at [COVID-19 Alberta statistics | alberta.ca](#).
- Early evidence shows that short-term vaccine effectiveness of a booster dose against infection and severe illness is very good.

Current evidence for those 18 to 39:

- Currently in Alberta, individuals 18 to 39 years of age have lower rates of severe disease outcomes from breakthrough infections, after receiving a complete primary series of COVID-19 vaccine, compared to older age groups.
- Boosters in this population will have benefit at a population level by adding an additional layer of protection against transmission, and may be important to protect household members who may be vulnerable to severe outcomes or too young to be immunized.
- Individuals in this population are encouraged to discuss with their health care provider whether a booster dose is recommended based on their personal circumstances, including any underlying chronic condition such as those listed in the following section. Additional considerations include risk of exposure (e.g., occupations that require direct contact with a large number of people, working with or caring for vulnerable populations, or living in a group setting where COVID-19 may transmit more easily).
- Current evidence suggests there is a likely causal association between myocarditis and the mRNA COVID-19 vaccines: Pfizer-BioNTech (Comirnaty) and Moderna (Spikevax). This risk is rare; cases were more frequent in adolescents and younger adults under 30 years of age than in older individuals, in males than in females and following the second dose of vaccine than the first dose. See [Clinical Considerations](#) for additional information.
- There are preliminary reports of a small number of myocarditis cases following booster doses among younger adults in the US and Israel, which offer booster doses for all adults. The risk after a third dose is reported to be lower than after a second dose.

Current evidence for those with chronic conditions:

- The risk of severe COVID-19 increases as the number of underlying medical conditions increases in a person.
- Individuals with chronic condition(s) may have a poorer immune response after receiving a full two-dose vaccine series compared to the rest of the population, potentially increasing the risk of breakthrough infections.
- There is also an increased risk of hospital-acquired infection to vaccine preventable diseases due the increased likelihood of prolonged hospitalization and frequent outpatient visits associated with chronic disease.

List of eligible chronic conditions*

- Asplenia or dysfunction of the spleen (a missing spleen or a spleen that is no longer working)
- Cancer (anyone with a new diagnosis of or treatment for all forms of cancer in the last year, except non-invasive skin cancer)
- Chronic heart disease and vascular disease:

- Including: congenital heart disease, chronic heart failure, heart or kidney disease from high blood pressure, and a history of a stroke
- Not including: high blood pressure alone
- Chronic Liver disease due to any cause (for example: cirrhosis, chronic hepatitis, and hemochromatosis)
- Chronic neurological disease (for example: epilepsy, Parkinson’s disease, MS, muscular dystrophy and dementia)
- Chronic respiratory (lung) diseases:
 - Including: COPD, cystic fibrosis, pulmonary hypertension, and severe asthma that required an asthma-related emergency department visit or hospital admission in the past year
 - Not including: mild or well-controlled asthma
- Diabetes requiring insulin or other anti-diabetic medication to control
- Pregnancy: anyone who is currently pregnant
- Severe mental illness or substance use disorder requiring a hospital stay during the past year (for example: schizophrenia, depression, anxiety disorders and others)
- Severe obesity: a Body Mass Index of 40 kg/m² or more
- Severe or profound learning disabilities or severe developmental delay:
 - Including: individuals with Down syndrome, fetal alcohol syndrome, cerebral palsy, autism spectrum disorder and others
 - Not including: Attention Deficit Hyperactivity Disorder (ADHD)

** Same chronic conditions that were prioritized in phase 2 of the initial vaccine roll out.*

Current evidence for those with immunocompromised conditions:

- While data on a fourth dose of a COVID-19 vaccine after the recommended three-dose primary series in moderately to severely immunocompromised individuals are currently limited, many of these individuals are at a higher risk of severe outcomes of COVID-19 and also at increased risk of decreasing protection over time since vaccination. Therefore, a booster dose could provide individual benefits for them.

List of eligible immunocompromised conditions**

- Transplant recipients, including solid organ transplants and hematopoietic stem cell transplants
- Individuals with malignant hematologic disorders and non-hematologic malignant solid tumors prior to receiving or receiving active treatment (chemotherapy, targeted therapies, immunotherapy or having received previous COVID-19 vaccines while on active treatment), excluding individuals receiving solely hormonal therapy, radiation therapy or a surgical intervention

- Individuals being treated with an anti-CD20 monoclonal antibody such as Rituximab
- Individuals with chronic kidney disease on dialysis
- Recipients of chimeric antigen receptor (CAR)-T-cell therapy.
- Individuals with moderate to severe primary immunodeficiency (e.g., DiGeorge syndrome, Wiskott-Aldrich syndrome).
- Individuals with Stage 3 or advanced HIV infection and those with acquired immunodeficiency syndrome
- Individuals undergoing immunosuppressive therapies (e.g., anti-B cell therapies, high-dose systemic corticosteroids, alkylating agents, antimetabolites, or tumor-necrosis factor (TNF) inhibitors and other biologic agents).

*** Same list of immunocompromised conditions that are eligible for a three-dose primary series.*

Booster dose for First Nations, Métis and Inuit adults

Recommendation:

All First Nations, Métis and Inuit aged 18 years and older are eligible for a third dose at a minimum of a five-month interval from the second dose.

Current evidence

Throughout the COVID-19 pandemic, First Nations, Métis and Inuit have been disproportionately affected due to a number of intersecting equity factors and had a higher rate of severe outcomes, and a younger average age at death. They are almost twice as likely as the non-Indigenous population to need hospital care for COVID-19.

Nationally, the rate of active COVID-19 cases in First Nations communities was 4.2 times higher than the rate in the general population as of October.

Ensuring strengthened protection from immunization in individuals in this population has the potential to reduce or prevent the exacerbation of intersecting health and social inequities.

The proportion of Canadians who identify as Indigenous and have at least one underlying medical condition associated with severe COVID-19 is higher compared to non-Indigenous people in Canada for every age category above 20 years of age.

First Nations, Métis and Inuit were included in the earliest stages of the COVID-19 vaccine rollout and may be at increased risk of waning of protection because more time has elapsed since their second dose and some of them were immunized with a very short interval between doses. COVID-19 data for First Nations people can be found on the [Alberta First Nations Information Governance Centre](#).

All immunization decisions regarding First Nations, Métis and Inuit populations are made in partnership with Indigenous leaders and communities.

Booster dose for residents of seniors' congregate living facilities

Recommendation:

- Residents of seniors' congregate living facilities—including long-term care facilities, designated supportive living facilities and in seniors' lodges—are eligible for a third dose of COVID-19 vaccine at a minimum of a five-month interval from the second dose.

Additional evidence

- Residents of senior's congregate living facilities were prioritized for COVID-19 vaccines when vaccines were first delivered, with shorter intervals between first and second doses. Subsequently, there is an increased possibility of waning vaccine effectiveness.
- Residents may also be at increased risk for COVID-19 infection because of their daily interactions with other residents and staff.
- Analysis of nursing home COVID-19 data from the CDC's National Healthcare Safety Network found that two doses of mRNA vaccines were 74.7% effective against infection among nursing home residents early in the vaccination program (March–May 2021). During June–July 2021, when the Delta variant circulation predominated, effectiveness declined significantly to 53.1%.
(<https://www.cdc.gov/mmwr/volumes/70/wr/mm7034e3.htm>)

Booster dose for health care workers

Recommendation:

All health-care workers 18 years of age and over are eligible for a third dose at a minimum of a five -month interval from the second dose.

Current evidence

- Maintaining health system capacity is crucial to minimize serious illness and overall deaths while minimizing societal disruption as a result of the COVID-19 pandemic.
- Health care workers, particularly those giving direct patient care pose increased risk of transmission to vulnerable populations if infected.

Booster dose for recipients of a viral vector vaccine series (AstraZeneca/COVISHIELD or Janssen vaccine):

Recommendation:

- Individuals who received two doses of AstraZeneca or one dose of Janssen are eligible for a booster dose of an mRNA vaccine, as long as they have not already received an mRNA dose for any other eligible purpose, including travel.

Current evidence

- Vaccine effectiveness against severe COVID-19 outcomes with all vaccine types (including viral vector vaccine) remains high, but it is currently unclear to what extent the duration of protection may vary by vaccine product.
- mRNA vaccines (Moderna Spikevax and Pfizer-BioNTech Comirnaty) have been shown to be highly efficacious in preventing infection, severe illness and death. Viral vector vaccines (AstraZeneca Vaxzevria/COVIDSHIELD and Janssen) have been shown to be highly to moderately effective.
 - Regularly updated COVID-19 vaccine effectiveness in Alberta can be found at [COVID-19 Alberta statistics | alberta.ca](https://www.alberta.ca/COVID-19-Alberta-statistics).
- People who received a complete vaccine series of a viral vector vaccine have somewhat lower initial vaccine effectiveness and may experience waning protection sooner than people who received a primary series that included at least one dose of an mRNA vaccine.

Clinical considerations for administering a booster dose: all eligible populations

- Before receiving a booster dose, while it is not required to do so, eligible individuals may wish to consult with their healthcare provider about any advantages or disadvantages of receiving a booster dose of vaccine.
- As with all vaccine administration, immunizers must receive informed consent from the person requesting a booster dose prior to immunization to ensure they understand the benefits versus risks of a booster dose.
- For individuals with immunocompromising conditions, if the Moderna vaccine is used as a booster dose, 100 mcg is the recommended dosing. If the individual requests to receive a lower dose (50mcg) or if in their clinician's opinion it may be better for them to receive a lower dose (50mcg), they can do so with informed consent.
- Adults 65 years of age and older, residents of seniors' congregate living facilities and eligible immunocompromised individuals 18 years and older are recommended to receive the full dose (100 mcg) if being offered Moderna (Spikevax) vaccine for a booster dose or the full dose (30 mcg) if being offered Pfizer BioNTech (Comirnaty) vaccine.
- For all other individuals less than 65 years of age, if offering Moderna (Spikevax) as a booster dose, a half dose (50 mcg) is recommended or the full dose (30 mcg) if being offered Pfizer-BioNTech (Comirnaty).
- There is heterogeneity among those who are moderately to severely immunocompromised, and risks from COVID-19, as well as the likelihood of a reduced response to vaccines, will vary depending on age and the immunocompromising condition. Therefore, if individuals 18 years of age and older with certain immunocompromising conditions require to receive a lower dose (50mcg) or if in their clinician's opinion it may be better for them to receive a lower dose (50mcg), they can do so with informed consent.

- As a precautionary measure, Alberta Health recommends that individuals who experienced myocarditis and/or pericarditis after any preceding dose of an mRNA vaccine should discuss decisions around the third dose, including timing, with their clinician. In general, they are advised to defer receiving another dose until more data is available.
- The risk of myocarditis and pericarditis following a dose of mRNA vaccine is rare; however, given the higher rate of myocarditis and/or pericarditis following immunization with Moderna (Spikevax) vaccine relative to Pfizer-BioNTech (Comirnaty) vaccine, particularly in males, it is recommended that Pfizer-BioNTech (Comirnaty) vaccine is offered as the preferred choice of mRNA COVID-19 vaccine in those aged 12 to 29 years to start and/or complete their primary series (as well as for immunocompromised individuals who are eligible for a third dose as their primary series). See the [COVID-19 immunization update on myocarditis and pericarditis for ages 12 to 29](#) for more information.
 - For booster doses, given that there is limited evidence on the myocarditis risk from the Moderna (Spikevax) 50 mcg dose, the Pfizer-BioNTech (Comirnaty) vaccine may be recommended preferentially in this age group, but the Moderna (Spikevax) vaccine could be used if preferred by the patient.
 - There is emerging evidence that indicates a potential reduction of myocarditis risk with a longer interval between first and second doses of mRNA COVID-19 vaccine. In alignment with the National Advisory Committee on Immunization (NACI) recommendations for optimal interval, Alberta recommends a dosing interval of 8 weeks between the first and second dose of any mRNA vaccine series for all age groups, including a mixed series.
- It is important for health care professionals to support and encourage patients/clients to continue to maintain COVID-19 disease prevention measures such as masking and physical distancing even after a booster dose. Household members and close relatives of these individuals should be encouraged to receive the primary series of COVID-19 vaccine, if they haven't already.
- Serologic testing or cellular immunity testing to assess immune response and guide clinical care (e.g., need for a booster dose) are not recommended at this time.
- An mRNA vaccine should be administered as the booster dose except in the event of contraindication or refusal. When possible, it is preferred that the booster dose be the same mRNA vaccine as that received in the initial series, but either mRNA vaccine is acceptable. If the initial series was a mixed mRNA vaccine series or a viral vector vaccine series, either mRNA vaccine can be administered.
- On September 28, 2021, NACI released recommendations that COVID-19 vaccines may be given at the same time as, or any time before or after, other vaccines, including live, non-live, adjuvanted or unadjuvanted vaccines, for those age 12 and older. The NACI discretionary recommendation can be found here: [Concomitant administration with other vaccines](#).

Booking a booster dose: all eligible populations

- All eligible individuals can now book appointments to receive a booster dose of vaccine by calling 811 or [booking online](#).
- Those deemed ineligible because less than five months has passed since receiving their second dose will be asked to re-book when eligible.

For First Nations adults

- First Nations adults can receive a booster dose of vaccine at an on-reserve public health clinic or by calling 811 or [booking online](#).

For residents of seniors' congregate living facilities

- Residents of seniors' congregate living facilities received their booster doses at their facilities.