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National Advisory Committee on Immunization (NACI): Summary of extended dose interval statement of April 7, 2021

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Overview of the statement

In the context of the ongoing pandemic, [NACI \(National Advisory Committee on Immunization\)](#) recommends extending the time between the first and second dose of COVID-19 vaccines up to four months while vaccine supply is limited. Second doses should be offered as soon as possible after all eligible populations have been offered first doses, with priority given to those at highest risk of severe illness and death from COVID-19 disease. With Canada's expected vaccine supply, the interval between the first and second dose is expected to be less than four months. Jurisdictions may choose to shorten the time between the first and second dose in specific populations based on local rates of cases and what is known about where transmission is happening, local vaccine supply, their local methods of delivering vaccine and emerging evidence.

Extending COVID-19 vaccine dose intervals will optimize vaccine rollout and protection of the population by allowing many more people to gain protection against COVID-19 by receiving the first dose of a COVID-19 vaccine earlier. This helps to provide direct protection to the individual and those around them and may also help to prevent spread in the community.

In making its recommendations, NACI carefully considered all available evidence about how well the COVID-19 vaccines work, as well as mathematical modelling, vaccine supply and public health principles of equity, feasibility and acceptability. Current real-world evidence indicate good vaccine effectiveness against symptomatic disease and asymptomatic infection and very good effectiveness against hospitalization after the first dose of COVID-19 vaccines.

NACI recommends that at this time it is very important to continue to follow public health measures as recommended by public health officials, regardless of vaccination status.

NACI will continue to monitor the evolving evidence and update its recommendations as needed.

NACI provides advice that is used by provinces and territories who are responsible for designing their immunization programs.

To see the full update, please visit [Extended dose intervals for COVID-19 vaccine to optimize early vaccine rollout and population protection in Canada in the context of limited vaccine supply.](#)

Background

On March 3, 2021, NACI released a [rapid response statement](#) recommending jurisdictions extend the time between the first and second dose of COVID-19 vaccines up to four months in order to provide

good protection against symptomatic COVID-19 disease to more people faster.

- Second doses should be offered as soon as possible after all people who are eligible have been offered their first dose. Jurisdictions may choose to shorten the time between the first and second dose in specific populations based on local rates of cases and what is known about where transmission is happening, local vaccine supply, their local methods of delivering vaccine and emerging evidence.
- Extending intervals to vaccinate more people will allow faster population-level protection, offering protection to the individual in three ways: 1) from their own vaccination; 2) by vaccinating those around them; and 3) possibly by decreasing spread of the virus in the community.
- Longer dose intervals between vaccine doses generally result in stronger final immune responses for vaccines.
- Based on Canada's expected vaccine supply with mRNA vaccines alone, extending dose intervals up to four months will allow 90% of adults over 50 years of age and 75% of adults aged 16 to 49 to receive a first dose of vaccine by the middle of June 2021.

Given the evidence that this strategy would have an important impact on reducing deaths and hospitalisations, NACI communicated their recommendations as fast as possible for jurisdictions to consider through a rapid response statement while the full report was being prepared.

NACI is now releasing the full advisory committee statement, which further explains the rationale behind this extended dose interval recommendation and includes references and detailed summaries of evidence updated to reflect the most recent data.

Current evidence demonstrates very good vaccine efficacy (protection shown in clinical trials) and good vaccine effectiveness (protection in real-world use) against SARS-CoV-2 infection when the first dose of COVID-19 vaccine begins to take effect. Real world evidence of protection comes from Canadian and international jurisdictions that have implemented extended dose strategies, where this is being closely monitored, and from other countries who monitored the response from the first dose of mRNA vaccines before the second dose is given.

- **Efficacy under ideal clinical trial conditions after the first dose:** The mRNA vaccines (Pfizer-BioNTech and Moderna) demonstrated 92% protection in clinical trials for the short period of time until the second dose was given. The AstraZeneca vaccine demonstrated 76% protection in clinical trials, which was modelled to persist for up to 90 days.
- **Effectiveness from real-world use after the first dose:** Observational studies show vaccine effectiveness generally between 60 to 80% (with some lower and higher estimates) against infection with SARS-CoV-2 (the virus that causes COVID-19); this reflects symptomatic disease and asymptomatic infection combined. Most importantly, these studies show one dose of the Pfizer-BioNTech and AstraZeneca vaccines are approximately 80% effective against hospitalization. A study also indicated that the Pfizer-BioNTech vaccine is approximately 85% effective against death due to COVID-19 (data is not yet available for the AstraZeneca vaccine).
- **Specific populations:** There have been some recent studies reporting variable immune response levels following the first dose of a COVID-19 vaccine in some specific population groups with medical conditions (solid organ transplants, cancer) who have been studied so far. We have no efficacy data on two-dose series in these populations, as they were excluded from clinical trials. There is currently no real-world effectiveness data on how the vaccine works

in these groups and there is not yet an established direct link between antibody levels or other immune responses to protection against COVID-19 disease. In addition to direct protection by vaccination, vulnerable populations are also expected to be protected by lower levels of disease in the community through fast and broad rollout of first doses and public health measures to contain the spread of the virus. NACI will continue to monitor evolving evidence on risk factors for severe disease, as well as vaccine immune responses in high-risk groups and vaccine effectiveness over time, and will adjust recommendations if needed.

NACI continues to recommend that an extended interval of up to four months to rapidly provide vaccine to as many people as possible based on:

- **clinical trial evidence** that demonstrates very good vaccine efficacy from the first dose;
- **new real-world evidence** that suggests good vaccine effectiveness against symptomatic disease and asymptomatic infection and very good effectiveness against hospitalization, including among older populations; there is currently no evidence that this protection decreases over time;
- **mathematical modelling** which demonstrates that accelerating vaccine coverage by extending dose intervals would have substantial population-level benefits by reducing symptomatic disease, hospitalizations and deaths while there is limited vaccine supply;
- **principles of vaccine science and immunology**, which show that a longer interval between the first and second dose generally results in a better immune response after the second dose;
- **experience with other multi-dose vaccines**, which suggests that protection from the first dose of a vaccine series can last six months or longer, while second doses extend protection for even longer

- **public health principles of ethical decision-making, including equity, feasibility and accessibility**, which favours extending intervals, especially while COVID-19 cases, severe illness, hospitalizations, and deaths are high; and in addition, faster progress towards population protection will help to protect vulnerable populations
- **NACI's expert opinion** that within a global pandemic setting, reducing the risk of severe disease outcomes in the majority of the population and decreasing transmission in the community will have the greatest public health impact.

More information will become available as vaccination programs continue to roll out around the world. NACI will continue to closely monitor the evolving evidence on the effectiveness of an extended dose interval and will update their recommendation as needed.

It is important to remember that public health measures (e.g. washing hands, wearing a mask, staying 2 metres apart, avoid unnecessary interactions with others) are a key part of protecting yourself and the population; and people should not change their behaviours after the first or second dose of vaccine at this time.

To see the full update, please visit [Extended dose intervals for COVID-19 vaccine to optimize early vaccine rollout and population protection in Canada in the context of limited vaccine supply.](#)

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