Public Health Agency of Canada | Agence de la santé publique du Canada

Canada

Vaccine Confidence InfoBulletin

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Providing credible and timely information on vaccines to health care providers, public health decision makers and public health enthusiasts to support vaccine confidence. Thank you for being a trusted source of vaccine information for individuals and communities across Canada.

In this issue

Trending topics

Recommendations on the use of Pfizer-BioNTech Comirnaty® (3 mcg) COVID-19 vaccine in children 6 months to 4 years of age

Health Canada has authorized two COVID-19 vaccines for children under 5 years of age.

- The Moderna Spikevax™ mRNA (25 mcg) vaccine is authorized as a 2-dose primary series for children 6 months to 5 years of age.
- The Pfizer-BioNTech Comirnaty® mRNA (3 mcg) vaccine is authorized as a 3-dose primary series for children 6 months to 4 years of age.

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On October 21, 2022, the Public Health Agency of Canada (PHAC) released recommendations from the National Advisory Committee on Immunization (NACI) on the use of the Pfizer-BioNTech Comirnaty® (3 mcg) COVID-19 vaccine for children 6 months to 4 years of age. This guidance is based on current evidence and NACI expert opinion. NACI recommends that:

- A primary series of an mRNA COVID-19 vaccine may be offered to children 6 months to 4 years of age who are not moderately to severely immunocompromised and who do not have contraindications to the vaccine, with an interval of at least 8 weeks between doses. (Discretionary NACI Recommendation).
    - If readily available, the same mRNA vaccine product should be offered for all doses of a primary series. If two different mRNA vaccines are given, please refer to the PHAC Quick reference guide on the use of COVID-19 vaccines: Managing vaccine administration errors or deviations.
- A primary series plus an additional dose of an mRNA COVID-19 vaccine may be offered to children 6 months to 4 years of age who are moderately to severely immunocompromised who do not have contraindications to the vaccine. (Discretionary NACI recommendation).
    - NACI preferentially recommends a 3-dose primary series of the Moderna Spikevax™ (25 mcg) vaccine for children who are moderately to severely immunocompromised with an interval of 4 to 8 weeks between each dose. (Strong NACI Recommendation)
    - If the Moderna Spikevax™ (25 mcg) vaccine is not readily available, a 4-dose primary series of the Pfizer-BioNTech Comirnaty® (3mcg) vaccine may be offered, with an interval of 4 to 8 weeks between each dose. (Discretionary NACI Recommendation)
- For children 6 months to 5 years of age, COVID-19 vaccines should not routinely be given on the same day as other vaccines. (Strong NACI Recommendation).
    - For children who have had COVID-19, NACI suggests waiting 8 weeks after a positive COVID-19 test or the start of symptoms before beginning or continuing the primary series. This interval may be shortened to 4-8 weeks for children who are moderately to severely immunocompromised.

For the full statement, including supporting evidence and rationale, please see the NACI Statement: Recommendations on the use of Pfizer-BioNTech Comirnaty® (3 mcg) COVID-19 vaccine in children 6 months to 4 years of age.

For a summary of this NACI guidance, please see the Summary of NACI statement of October 21, 2022.

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Pfizer-BioNTech Comirnaty® BA.4/5 Bivalent (30 mcg) COVID-19 vaccine authorization and updated NACI guidance on the use of COVID-19 vaccine booster doses in Canada

On October 7, 2022, Health Canada authorized a second bivalent Omicron-spike containing mRNA COVID-19 vaccine – the Pfizer-BioNTech Comirnaty® BA.4/5 vaccine – for use in Canada as a booster dose in people 12 years of age and older. PHAC released updated guidance from NACI on the use of COVID-19 vaccine booster doses in Canada to reflect this new authorization.

NACI reiterated recommendations from the Interim guidance on planning considerations for a fall 2022 COVID-19 vaccine booster program in Canada.

NACI continues to recommend that all individuals 65 years of age and older and individuals 12 years of age and older who are at increased risk of severe illness from COVID-19 should be offered a fall COVID-19 vaccine booster dose, regardless of the number of booster doses previously received. (Strong NACI Recommendation). All other individuals 12 to 64 years of age may be offered a fall COVID-19 vaccine booster dose, regardless of the number of booster doses previously received. (Discretionary NACI Recommendation).

NACI recommends that bivalent Omicron-spike containing mRNA COVID-19 vaccines are preferred for booster doses this fall. (Strong NACI recommendation).

- Moderna Spikevax™ 50mcg BA.1 Bivalent (age ≥ 18 years)
- Pfizer-BioNTech Comirnaty® 30 mcg BA.4/5 Bivalent (age ≥ 12 years)

People who have already received an original mRNA COVID-19 vaccine as a fall booster will have good protection against serious illness and do not need to be revaccinated with a bivalent Omicron-spike containing vaccine.

NACI continues to recommend that fall COVID-19 booster doses may be offered at an interval of 6 months after a previous COVID-19 vaccine dose or 6 months after a previous SARS-CoV-2 infection. A shorter interval of at least 3 months may be considered, particularly in the context of heightened epidemiological risk, evolving epidemiology and operational considerations for the efficient deployment of fall immunization programs.

For the full statement, please see the NACI Statement: Updated guidance on COVID-19 vaccine booster doses in Canada.

For a summary of this NACI guidance, please see the Summary of NACI statement of October 7, 2022.

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Updated interim guidance on Imvamune® in the context of ongoing monkeypox outbreaks

On September 23, 2022, PHAC released updated guidance from NACI on the use of the Imvamune® vaccine in the context of ongoing monkeypox outbreaks in Canada.

In the context of an active monkeypox outbreak, NACI recommends that the Imvamune® vaccine should be offered as pre-exposure vaccination to individuals with highest risk of monkeypox. (Strong NACI Recommendation). Based on current and projected outbreak epidemiology, this currently includes:

- Men who have sex with men (MSM), and individuals who have sex with MSM, and who meet at least one of the following criteria:
    - Having two or more sexual partners or who are in a relationship where at least one of the partners has other sexual partners
    - Having had a confirmed sexually transmitted infection in the past year
    - Engaging in sexual contact in sex-on-premises venues
- Individuals who self-identify as sex workers, regardless of self-identified sex/ gender
- Staff or volunteers in sex-on-premises venues where workers may have contact with objects or materials that may be contaminated with the monkeypox virus without the use of personal protective equipment

When vaccine supply is adequate, NACI recommends that Imvamune® pre-exposure vaccination should be offered as a two-dose primary series, with at least 28 days between doses, to individuals at highest risk. (Strong NACI Recommendation).

If vaccine supply is limited, and in the context of the ongoing outbreaks, NACI recommends that dose sparing strategies, including extended dosing intervals and fractional dosing, should be considered to maximize vaccine coverage for those at highest risk of exposure. (Strong NACI Recommendation).

For the full NACI Rapid Response of September 23, 2022, please see the NACI Rapid Response: Updated interim guidance on Imvamune® in the context of ongoing monkeypox outbreaks.

For a summary of this NACI Rapid Response, please see the Summary of NACI Rapid Response of September 23, 2022.

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NACI continues to recommend the use of Imvamune® as post-exposure vaccination for individuals who have had a high-risk exposure to a probable or confirmed case of monkeypox, or within a setting where transmission is happening. For more information on this recommendation, please see the June 10, 2022 NACI Rapid Response: Interim guidance on the use of Imvamune® in the context of monkeypox outbreaks in Canada.

To access resources for health care providers, visit the Monkeypox: Vaccination clinic resources page on Canada.ca.

Featured article

Q&A on the use of COVID-19 bivalent Omicron-spike containing booster doses

Q1. What are bivalent Omicron-spike containing mRNA COVID-19 vaccines? Why does NACI recommend them over original mRNA COVID-19 vaccines for authorized populations for fall booster doses?

Bivalent vaccines include mRNA that targets the original strain of the SARS-CoV-2 virus and mRNA that targets Omicron strain(s). While original mRNA COVID-19 vaccines continue to provide good protection against severe COVID-19 outcomes, including hospitalization and death, they may have reduced effectiveness against symptomatic illness from the Omicron lineage subvariants, including the BA.1, BA.4, BA.5 subvariants. This is because Omicron is the most distinct variant of concern to date, with a number of key mutations distinguishing it from the original SARS-CoV-2 virus.

Because bivalent Omicron-spike containing mRNA vaccines include mRNA that is targeted for Omicron, they induce a stronger and more robust immune response and are expected to provide improved protection against the Omicron lineage subvariants compared to original mRNA vaccines.

Bivalent vaccines are expected to elicit a greater breadth of immune response, which may result in greater protection against future variants of concern.

Q2. What bivalent Omicron-spike containing mRNA COVID-19 vaccine should I recommend to patients?

Evidence to date shows bivalent Omicron-spike containing COVID-19 vaccine boosters induce a strong immune response and are expected to provide improved protection against Omicron lineage subvariants that are currently circulating in Canada. At this time, there is no evidence to suggest any meaningful difference in protection between the BA.1 and BA.4/BA.5 bivalent vaccines. NACI will continue to monitor the evidence as it emerges and will update guidance if needed.

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Q3. Will there be enough supply of bivalent Omicron-spike containing mRNA COVID-19 vaccines for all populations recommended to receive a fall booster?

Canada has secured sufficient supply to cover anticipated demand for Omicron-spike containing boosters for all those who are eligible through the fall and winter.

Q4. What if my patient does not want to receive a bivalent booster?

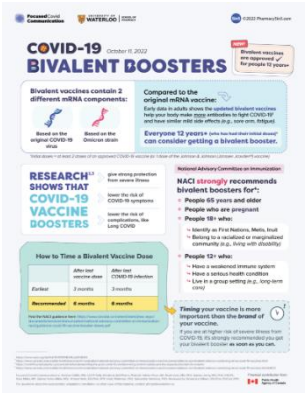
Individuals 12 years of age and older who are not able or willing to receive a bivalent Omicron-spike containing mRNA COVID-19 vaccine may be offered an original mRNA COVID-19 vaccine. Evidence shows that booster doses of original mRNA COVID-19 vaccines continue to provide good protection against severe COVID-19 outcomes, including hospitalization and death.

Participate in #MyWhy by sharing your reason for getting vaccinated! **For information on #MyWhy visit the #MyWhy webpage.**

COVID-19 bivalent boosters infographic

This infographic was developed by the University of Waterloo School of Pharmacy. It provides a helpful snapshot of key information related to COVID-19 bivalent boosters that can be used within your practice to educate patients or as an informational resource for individuals within your community.

To download a copy to share within your practice, click here.



Science spotlight

Providing explanations of the science underpinning vaccine guidance and public health response.

The on-going evolution of the SARS-CoV-2 virus

The SARS-CoV-2 virus has evolved over time and continues to change resulting in new viral variants and subvariants. Emergence of new variants influence epidemiologic trends, with possible impacts on the effectiveness of vaccines, treatments and diagnostic tests. This month's science spotlight provides a closer look at variant emergence and its impact on COVID-19 disease, treatment and prevention.

How do viruses mutate?

Viruses replicate in host cells, utilizing the cell's own machinery to make copies of the virus which can spread to other cells, allowing infection to take hold. Each time the genetic material is copied as part of the viral replication process there is the potential for errors to be made. Most of the time, these changes

have little or no impact on the virus. Some mutations, especially at key locations like the region that defines the virus' spike protein, can impact the virus' properties. Properties of the virus that can be impacted include transmissibility or mode of transmission, severity of illness, detection using diagnostic tools, immune evasiveness (to both infection and vaccine-induced immunity), and the extent to which the virus responds to therapeutics.

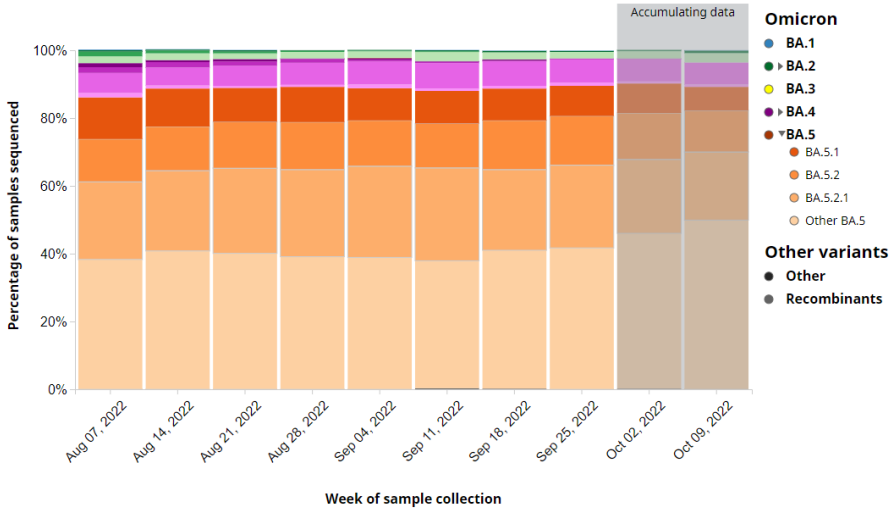
The stability of the genome is variable between viruses. Factors such as genome size, whether a virus is an RNA or a DNA virus, and whether a virus is single-stranded or double-stranded, all impact the rate of mutation [1]. For example, RNA viruses such as influenza viruses and coronaviruses are generally less stable than DNA viruses, and therefore mutate more easily [2]. The mutability of influenza viruses is one of the main reasons influenza vaccines are given annually. The SARS-CoV-2 virus is more stable than the influenza virus, however it can also mutate frequently and has resulted in multiple epidemiologic waves due to increasingly transmissible variants, including Omicron.

How do we study and monitor viral variants?

Viral mutations are identified through genomic sequencing of samples from positive SARS-CoV-2 tests. PHAC works with provincial and territorial partners and the Canadian COVID-19 Genomics Network (CanCOGeN) to sequence a percentage of all positive tests. Sequencing reveals the genetic code of the virus and therefore which variant caused the infection. The proportion of COVID-19 variants among sequenced samples in Canada is reported every week (see Figure 1). When linked with epidemiologic and clinical data and other research tools, scientists can study the impacts of variants on the epidemiology of the outbreak, vaccine and therapeutic effectiveness, and clinical disease course.

Figure 1. Weekly variant breakdown

This graphic shows the percentage mix of COVID-19 variants detected in Canada through whole genome sequencing, by week of sample collection.



For more information on how variants are classified in Canada see: SARS-CoV-2 variants: National definitions, designations and public health actions.

For more information on the global surveillance and classification mechanisms for SARS-CoV-2 variants see the World Health Organization's Tracking SARS-CoV-2 Variants web page.

Variant vaccines

Vaccine manufacturers are always looking to manufacture products that help provide better protection against the latest variants. For example, for the influenza vaccine, the strains are reviewed before each influenza season and vaccines are updated as required. Similarly, bivalent vaccines that contain mRNA encoding for the spike protein of both the original strain of the SARS-CoV-2 virus and sublineages of the Omicron variant are now being offered as booster doses. Studies on neutralizing antibody responses show that a bivalent vaccine containing an Omicron strain and the original strain elicits a greater neutralizing response towards all tested Omicron subvariants when compared to the original monovalent vaccine formulation. Evidence from real-world use of bivalent vaccines will inform bivalent vaccine effectiveness and duration of protection.

For more information on COVID-19 bivalent Omicron-containing booster doses, see the Trending topics section and the Featured article section within this issue.

In the clinic

Providing current recommendations, resources and vaccination best practices for immunizers.

Comparison table of the Moderna Spikevax™ and Pfizer-BioNTech Comirnaty® COVID-19 vaccines

Table 1 represents a comparison of the Moderna Spikevax™ COVID-19 vaccine products and Table 2 represents a comparison of the Pfizer-BioNTech Comirnaty® COVID-19 vaccine products authorized for use in Canada. These resources provide a brief overview of the different vaccine characteristics and may be used as a quick reference for health care providers to help select the appropriate vaccine product for their clients.

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Table 1 - Moderna Spikevax™ COVID-19 vaccine product comparison[a][b][c][d][e]

Moderna Spikevax® COVID-19 Vaccines									
Vial cap colour / label border/ presentation	**Red vial cap (0.20 mg/mL)[f]**				**Royal Blue vial cap (0.10 mg/mL)[g]**				
	Light blue label border **(original)**				Purple label border **(original)**				Green label border **(original and Omicron B.1.1.529 (BA.1)**
Doses per vial	100 mcg - 5 mL / 10 doses per vial 50 mcg – 5 mL / 20 doses per vial				50 mcg - 2.5 mL / 5 doses per vial 25 mcg – 2.5 mL / 10 doses per vial				50 mcg (25 mcg 1273 + 25 mcg .529) – 2.5 mL / 5 doses per vial
Age[h]	6 months to 5 years	6 to 11 years	12 to 17 years	18 years & older	6 months to 5 years	6 to 11 years	12 to 17 years	18 years & older	18 years & older
Primary series doses	N/A	0.25 mL (50 mcg)	0.5 mL (100 mcg)	0.5 mL (100 mcg)	0.25 mL (25 mcg)	0.5 mL (50 mcg)	N/A	N/A	N/A
Booster doses	N/A	N/A	N/A	0.25 mL (50 mcg)	N/A	N/A	N/A	0.5 mL (50 mcg)	0.5 mL (50 mcg)
Potential allergens	• Polyethylene glycol (PEG) • Tromethamine (trometamol or Tris)								
Route of administration	• Intramuscular (IM)								
Syringe and needle selection[i]	• Preferentially use a low dead-volume syringe and/or needle • 22 to 25-gauge needle for administration								

[a] Moderna Spikevax COVID-19 vaccine
[b] COVID-19 vaccine: Canadian Immunization Guide
[c] Moderna Spikevax (COVID-19 Vaccine, mRNA) Product Monograph
[d] storage-handling-dosage-admin.pdf (modernacovid19global.com)
[e] Spikevax_Bivalent_DASH_EN.pdf (modernacovid19global.com)
[f] The 0.20 mg/mL presentation is not intended for preparation of the 25 mcg dose.
[g] The 0.10 mg/mL presentation is not intended for preparation of the 100 mcg dose.
[h] Age indication as per product monograph
[i] Refer to the Canadian Immunization Guide for needle selection guidelines: https://www.canada.ca/en/public-health/services/publications/healthy-living/canadian-immunization-guide-part-1-key-immunization-information/page-8-vaccine-administration-practices.html#t3

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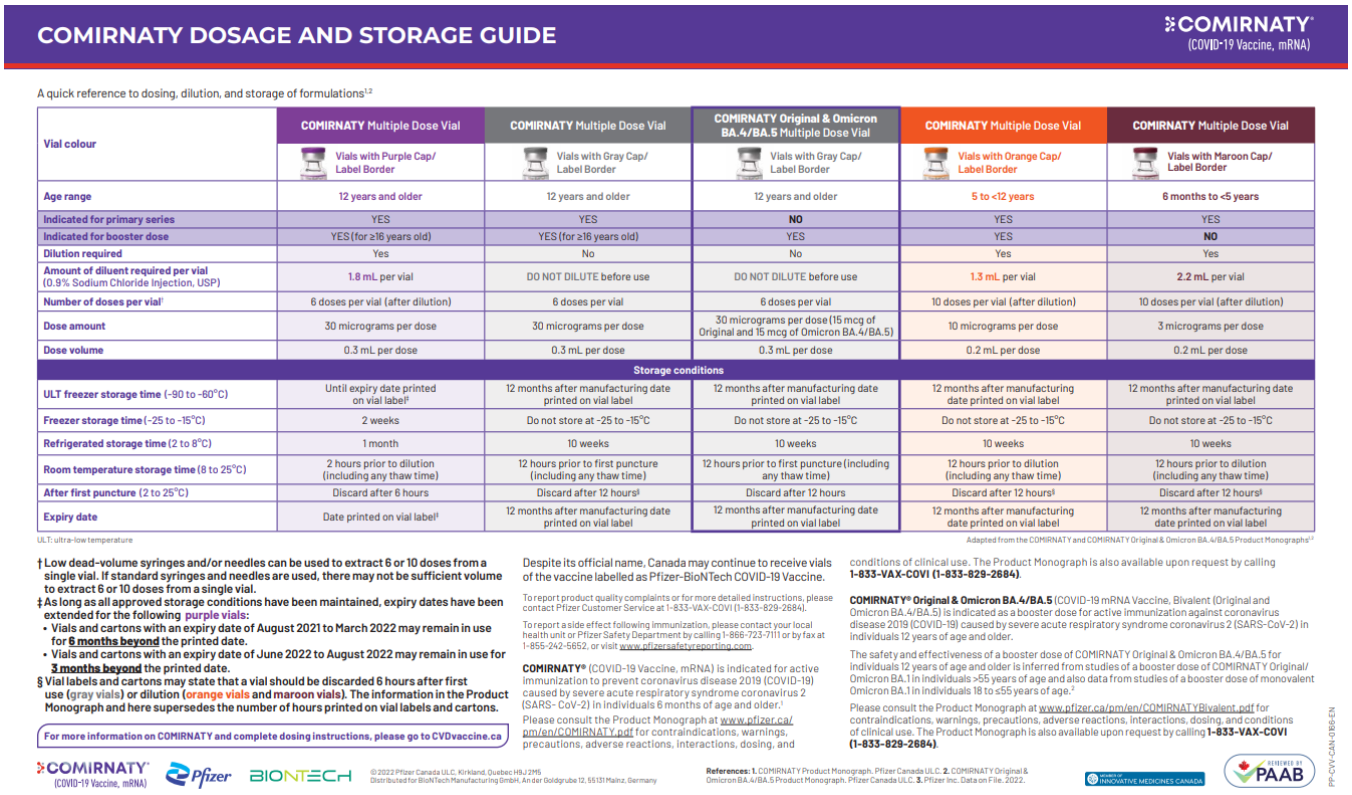
Table 2 - Pfizer-BioNTech Comirnaty® COVID-19 vaccine quick reference guide

To access this table, please see the Comirnaty® Dosage and Storage Guide.



COMIRNATY DOSAGE AND STORAGE GUIDE

COMIRNATY (COVID-19 Vaccine, mRNA)

A quick reference to dosing, dilution, and storage of formulations[1,2]

Vial colour	COMIRNATY Multiple Dose Vial Vials with Purple Cap/ Label Border	COMIRNATY Multiple Dose Vial Vials with Gray Cap/ Label Border	COMIRNATY Original & Omicron BA.4/BA.5 Multiple Dose Vial Vials with Gray Cap/ Label Border	COMIRNATY Multiple Dose Vial Vials with Orange Cap/ Label Border	COMIRNATY Multiple Dose Vial Vials with Maroon Cap/ Label Border
Age range	12 years and older	12 years and older	12 years and older	5 to <12 years	6 months to <5 years
Indicated for primary series	YES	YES	NO	YES	YES
Indicated for booster dose	YES (for ≥16 years old)	YES (for ≥16 years old)	YES	YES	NO
Dilution required	Yes	No	No	Yes	Yes
Amount of diluent required per vial (0.9% Sodium Chloride Injection, USP)	1.8 mL per vial	DO NOT DILUTE before use	DO NOT DILUTE before use	1.3 mL per vial	2.2 mL per vial
Number of doses per vial†	6 doses per vial (after dilution)	6 doses per vial	6 doses per vial	10 doses per vial (after dilution)	10 doses per vial (after dilution)
Dose amount	30 micrograms per dose	30 micrograms per dose	30 micrograms per dose (15 mcg of Original and 15 mcg of Omicron BA.4/BA.5)	10 micrograms per dose	3 micrograms per dose
Dose volume	0.3 mL per dose	0.3 mL per dose	0.3 mL per dose	0.2 mL per dose	0.2 mL per dose
Storage conditions					
ULT freezer storage time (-90 to -60°C)	Until expiry date printed on vial label‡	12 months after manufacturing date printed on vial label	12 months after manufacturing date printed on vial label	12 months after manufacturing date printed on vial label	12 months after manufacturing date printed on vial label
Freezer storage time (-25 to -15°C)	2 weeks	Do not store at -25 to -15°C	Do not store at -25 to -15°C	Do not store at -25 to -15°C	Do not store at -25 to -15°C
Refrigerated storage time (2 to 8°C)	1 month	10 weeks	10 weeks	10 weeks	10 weeks
Room temperature storage time (8 to 25°C)	2 hours prior to dilution (including any thaw time)	12 hours prior to first puncture (including any thaw time)	12 hours prior to first puncture (including any thaw time)	12 hours prior to dilution (including any thaw time)	12 hours prior to dilution (including any thaw time)
After first puncture (2 to 25°C)	Discard after 6 hours	Discard after 12 hours§	Discard after 12 hours	Discard after 12 hours§	Discard after 12 hours§
Expiry date	Date printed on vial label‡	12 months after manufacturing date printed on vial label	12 months after manufacturing date printed on vial label	12 months after manufacturing date printed on vial label	12 months after manufacturing date printed on vial label

ULT: ultra-low temperature

Adapted from the COMIRNATY and COMIRNATY Original & Omicron BA.4/BA.5 Product Monographs[1,2]

† Low dead-volume syringes and/or needles can be used to extract 6 or 10 doses from a single vial. If standard syringes and needles are used, there may not be sufficient volume to extract 6 or 10 doses from a single vial.

‡ As long as all approved storage conditions have been maintained, expiry dates have been extended for the following purple vials:
- Vials and cartons with an expiry date of August 2021 to March 2022 may remain in use for **6 months beyond** the printed date.
- Vials and cartons with an expiry date of June 2022 to August 2022 may remain in use for **3 months beyond** the printed date.

§ Vial labels and cartons may state that a vial should be discarded 6 hours after first use (gray vials) or dilution (orange vials and maroon vials). The information in the Product Monograph and here supersedes the number of hours printed on vial labels and cartons.

For more information on COMIRNATY and complete dosing instructions, please go to CVDvaccine.ca

Despite its official name, Canada may continue to receive vials of the vaccine labelled as Pfizer-BioNTech COVID-19 Vaccine.

To report product quality complaints or for more detailed instructions, please contact Pfizer Customer Service at 1-833-VAX-COVI (1-833-829-2684).

To report a side effect following immunization, please contact your local health unit or Pfizer Safety Department by calling 1-866-723-7111 or by fax at 1-855-242-5652, or visit www.pfizersafetyreporting.com.

COMIRNATY® (COVID-19 Vaccine, mRNA) is indicated for active immunization to prevent coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS- CoV-2) in individuals 6 months of age and older.[1]

Please consult the Product Monograph at www.pfizer.ca/pm/en/COMIRNATY.pdf for contraindications, warnings, precautions, adverse reactions, interactions, dosing, and conditions of clinical use. The Product Monograph is also available upon request by calling **1-833-VAX-COVI (1-833-829-2684)**.

COMIRNATY® Original & Omicron BA.4/BA.5 (COVID-19 mRNA Vaccine, Bivalent (Original and Omicron BA.4/BA.5)) is indicated as a booster dose for active immunization against coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in individuals 12 years of age and older.

The safety and effectiveness of a booster dose of COMIRNATY Original & Omicron BA.4/BA.5 for individuals 12 years of age and older is inferred from studies of a booster dose of COMIRNATY Original/ Omicron BA.1 in individuals >55 years of age and also data from studies of a booster dose of monovalent Omicron BA.1 in individuals 18 to ≤55 years of age.[2]

Please consult the Product Monograph at www.pfizer.ca/pm/en/COMIRNATYBivalent.pdf for contraindications, warnings, precautions, adverse reactions, interactions, dosing, and conditions of clinical use. The Product Monograph is also available upon request by calling **1-833-VAX-COVI (1-833-829-2684)**.

COMIRNATY (COVID-19 Vaccine, mRNA) Pfizer BIONTECH

References: 1. COMIRNATY Product Monograph, Pfizer Canada ULC. 2. COMIRNATY Original & Omicron BA.4/BA.5 Product Monograph, Pfizer Canada ULC. 3. Pfizer Inc. Data on File. 2022.

INNOVATIVE MEDICINES CANADA

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Key resources

- Planning guidance for immunization clinics for COVID-19 vaccines – Appendix 16: Overview of key features of COVID-19 vaccines authorized in Canada
- Health Canada COVID-19 vaccines and treatments portal - Access resources for health care providers such as product monographs, storage, handling, and administration information, public advisories and risk communications, and more.
- Moderna Spikevax™ manufacturer website and Pfizer-BioNTech Comirnaty® manufacturer website - Includes additional resources for health care providers.

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Community spotlight

Putting the spotlight on innovative projects and best practices from communities across Canada.

Ma Mawi Wi Chi Itata Centre – Protecting our future

The Ma Mawi Wi Chi Itata Centre, with funding from the PHAC Immunization Partnership Fund (IPF), has launched the Protecting our Future campaign.

This initiative takes a community-driven grassroots approach to addressing vaccine hesitancy within the urban Indigenous community in Winnipeg by providing accessible, culturally relevant, and evidence-based information to the community in a safe and trusting way. The campaign is guided through consultations with community members, community service providers, Indigenous health professionals, Elders, Knowledge Keepers, and Ma Mawi Wi Chi Itata frontline staff.

The aim of the project is to ensure that culturally appropriate services, such as assistance with booking COVID-19 vaccine appointments as well as transportation to and from the appointment, are available and accessible to Winnipeg's urban Indigenous children, youth, families, individuals, and seniors/Elders.

Protecting our Future has produced many communications tools to promote COVID-19 vaccine booster uptake such as direct mail flyers, postcards, and posters. Visit the Ma Mawi Wi Chi Itata Centre on Instagram (@ma_mawi) to explore these visually appealing tools.

PHAC webinars and webcasts for health care providers

PHAC, in collaboration with the Canadian Vaccination Evidence Resource and Exchange Centre (CANVax) and the National Collaborating Centre for Infectious Diseases (NCCID), offers expert-led webinars and webcasts focused on providing health care providers with clinical guidance and information related to key vaccine topics.

Webcasts are video resources.

Webinars are live events, with an audience and question & answer period. These live events are recorded and later posted for viewing.

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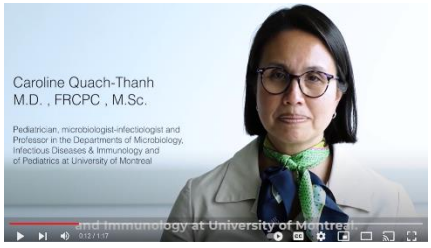
Webinar and webcast watch list

Seasonal Influenza Immunization 2022-2023

Dr. Jesse Papenburg and Dr. Robyn Harrison discuss the NACI recommendations on seasonal influenza vaccine use for the 2022-2023 season. The webinar addresses the role of health care providers in vaccine uptake and includes an overview of antiviral treatment of influenza.

This fall we protect ourselves against influenza and COVID-19



Dr. Caroline Quach-Thanh discusses the importance of seasonal influenza and COVID-19 vaccination. This video is available in English and French as well as 18 additional languages (website available in French only), including Italian, Vietnamese, and Hindu. This video series was produced by ACCESSS (Alliance des comunautés culturelles pour l'égalité dans la santé et les services sociaux) with support from the PHAC IPF.

Contact Vaccine Confidence

Subscribe to receive the PHAC Vaccine Confidence InfoBulletin directly in your inbox. To explore past issues, see archived issues on CANVax's website.

Have questions or feedback to share? Email us: vaccination@phac-aspc.gc.ca

Please note that any medical questions should be directed to your local health care provider and any urgent medical questions should be directed to 911 or your local emergency department.

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Annex

References

[1] R. Sanjuan and P. Domingo-Calap, "Mechanisms of viral mutation," *Cell Mol Life Sci,* vol. 73, no. 23, pp. 4433-4448, 2016.

[2] T. G. Villa, A. G. Abril, S. Sanches, T. de Miguel and A. Sanchez-Perez, "Animal and human RNA viruses: genetic variability and ability to overcome vaccines," *Archives of Microbiology,* pp. 443-464, 2021.

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