Influenza Immunization Pocket Guide

For Health Care Providers

2022-2023

The purpose of this pocket guide is to serve as a tool for health care providers to learn more about seasonal influenza vaccines in Canada and make strong recommendations to their patients.

Vaccination is an important component to help manage healthcare capacity during the influenza season in the fall and winter months, especially in the context of ongoing COVID-19 activity and community transmission of other respiratory viruses.

This pocket guide references recommendations made in the Canadian Immunization Guide Chapter on Influenza and Statement on Seasonal Influenza Vaccine for 2022–2023 from the National Advisory Committee on Immunization (NACI).

This pocket guide will include information on who should and should not receive the influenza vaccine, vaccine co-administration, recommended doses, and available vaccine products.

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Who should receive the influenza vaccine?

All individuals 6 months of age and older who do not have contraindications, should receive the annual influenza vaccine. According to NACI, particular focus should be placed on the following groups of people:

People at high risk of severe disease, influenza-related complications, or hospitalization

- All children 6–59 months of age
- Adults and children with the following chronic health conditions:
  - cardiac or pulmonary disorders (includes bronchopulmonary dysplasia, cystic fibrosis, and asthma);
  - diabetes mellitus and other metabolic diseases;
  - cancer, immune-compromising conditions (due to underlying disease, therapy, or both, such as solid organ transplant or hematopoietic stem cell transplant recipients);
  - renal disease
  - anemia or hemoglobinopathy
  - neurologic or neurodevelopment conditions (includes neuromuscular, neurovascular, neurodegenerative, neurodevelopmental conditions, and seizure disorders [and, for children, includes febrile seizures and isolated developmental delay], but excludes migraines and psychiatric conditions without neurological conditions);
  - morbid obesity (body mass index [BMI] of 40kg/m^2 and over); and
  - children 6 months to 18 years of age undergoing treatment for long periods with acetylsalicylic acid, because of the potential increase of Reye's syndrome associated with influenza
- Pregnant individuals
- People of any age who are residents of nursing homes and other chronic care facilities
- Adults 65 years of age and older; and
- Indigenous peoples

People capable of transmitting influenza to those at high risk

- Health care and other care providers in facilities and community settings who, through their activities, are capable of transmitting influenza to those at high risk
- Household contacts, both adults and children, of individuals at high risk, whether or not the individual at high risk has been vaccinated:
  - household contacts of individuals at high risk
  - household contacts of infants less than 6 months of age, as these infants are at high risk but cannot receive influenza vaccine
  - members of a household expecting a newborn during the influenza season
- Those providing regular child care to children 0-59 months of age, whether in or out of the home
- Those providing services within closed or relatively closed settings to people at high risk (e.g., crew on a ship)

Additional populations:

- People providing essential community services
- People who are in direct contact with poultry infected with avian influenza during culling operations

Who should not receive the influenza vaccine?

Influenza vaccination should usually be postponed in:

- People with serious acute illnesses until their symptoms have abated
  - Note: Vaccination should not be delayed because of minor or moderate acute illness, with or without fever. Immunizers should refer to NACI's **Guidance on the use of influenza vaccine in the presence of COVID-19** document for amended advice during the COVID-19 pandemic.

All influenza vaccines* should not be administered to:

- People who have had an anaphylactic reaction to a previous dose of influenza vaccine;
- People who have had an anaphylactic reaction to any of the vaccine components of a specific influenza vaccine, with the exception of egg
  - Note: Consideration may be given to offering a patient another influenza vaccine that does not contain the implicated component, in consultation with an allergy expert.
- People who have developed Guillain-Barré Syndrome (GBS) within 6 weeks of a previous influenza vaccination, unless another cause was found for GBS.

* *Influenza vaccines include: IIV (inactivated influenza vaccine), RIV4 (recombinant quadrivalent influenza vaccine) and LAIV (live attenuated influenza vaccine)*

LAIV4 (quadrivalent live attenuated influenza vaccine) should not be administered to:

- People with immune-compromising conditions, due to underlying disease, therapy, or both
  - Note: This excludes children with stable HIV infection on antiretroviral therapy (ART) and with adequate immune function.
- People with severe asthma (defined as currently on oral or high-dose inhaled glucocorticosteroids or active wheezing) or medically attended wheezing in the 7 days prior to the proposed date of vaccination.
  - Note: LAIV is not contraindicated for people with a history of stable asthma or recurrent wheezing which is not active.
- Children less than 24 months of age, due to increased risk of wheezing
- Children 2 to 17 years of age currently receiving aspirin or aspirin-containing therapy, because of the association of Reye's syndrome with aspirin and wild-type influenza infection
- Pregnant individuals
  - Note: LAIV is not contraindicated in breastfeeding (lactating) individuals.

Additional precautions for LAIV4

- LAIV4 should not be administered until 48 hours after antiviral agents active against influenza (e.g., oseltamivir, zanamivir) are stopped.
- Antiviral agents, unless medically indicated, should not be administered until 2 weeks after receipt of LAIV4 so that the antiviral agents do not kill the replicating vaccine virus.
- Significant nasal congestion might impede delivery of LAIV4 to the nasopharyngeal mucosa.
  - Therefore, IIV can be administered or LAIV4 can be deferred until congestion is resolved.
- LAIV4 recipients should avoid close association with people with severe immune-compromising conditions (e.g., bone marrow transplant recipients requiring isolation) for at least 2 weeks following vaccination, because of the theoretical risk for transmitting a vaccine virus and causing infection.
- LAIV4 recipients who are less than 18 years of age should avoid the use of aspirin containing products for at least 4 weeks after receipt of LAIV4.

Co-administration of influenza vaccine with other vaccines

As of September 2021, all seasonal influenza vaccines, including LAIV4, may be administered **at the same time as, or any time before or after, administration of other vaccines** (either live or inactivated). This includes COVID-19 vaccines for people 5 years of age or older.

Based on expert opinion, NACI recommends that LAIV4 can be given together with or at any time before or after the administration of any other live attenuated or inactivated vaccine. However, NACI recognizes that some vaccine providers may continue to choose to give LAIV4 and other live vaccines separated by at least 4 weeks as a professional preference.

For more information regarding vaccine co-administration, please refer to **Timing of Vaccine Administration** of the Canadian Immunization Guide.

How to co-administer more than one injection

When administering more than one injection at a single clinic visit, it is preferred to vaccinate in different limbs. If this is not possible, injections given in one limb should be separated by a distance of at least 2.5cm (1 inch).
A separate needle and syringe should be used for each injection.

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RECOMMENDED DOSAGE

The dose and route of administration vary by influenza vaccine product.

Age group	Number of doses required	IIV3-SD[a] or IIV4-SD[b] (IM)	IIV4-cc (Flucelvax® Quad) (IM)	IIV3-Adj (Fluad Pediatric® (6–23 months) or Fluad®) (IM)	IIV4-HD (Fluzone® High-Dose Quadrivalent) (IM)	RIV4 (Supemtek™) (IM)	LAIV4 (FluMist® Quadrivalent) (intranasal)
6-23 months	1 or 2 *	0.5 mL **	0.5 mL	0.25 mL	-	-	-
2-8 years	1 or 2 *	0.5 mL	0.5 mL	-	-	-	0.2 mL (0.1 mL per nostril)
9-17 years	1	0.5 mL	0.5 mL	-	-	-	0.2 mL (0.1 mL per nostril)
18-59 years	1	0.5 mL	0.5 mL	-	-	0.5 mL	0.2 mL (0.1 mL per nostril)
60-64 years	1	0.5 mL	0.5 mL	-	-	0.5 mL	-
65+ years	1	0.5 mL	0.5 mL	0.5 mL	0.7 mL	0.5 mL	-

Abbreviations:

IIV3-Adj: adjuvanted trivalent inactivated influenza vaccine;

IIV4-cc: quadrivalent mammalian cell-culture based inactivated influenza vaccine;

IIV4-HD: high-dose quadrivalent inactivated influenza vaccine;

IIV3-SD: standard-dose trivalent inactivated influenza vaccine;

IIV4-SD: standard-dose quadrivalent inactivated influenza vaccine;

RIV4: quadrivalent recombinant influenza vaccine;

IM: intramuscular;

LAIV4: quadrivalent live attenuated influenza vaccine.

(a) IIV3-SD formulations (Agriflu® and Influvac®) are authorized, but will not be available for use in Canada during the 2022-2023 influenza season.

(b) Afluria® Tetra (5 years and older), Flulaval® Tetra (6 months and older), Fluzone® Quadrivalent (6 months and older), Influvac® Tetra (3 years and older).

*Children 6 months to less than 9 years of age receiving a seasonal influenza vaccine for the first time in their life should be given 2 doses of influenza vaccine, with a minimum interval of 4 weeks between doses. Children 6 months to less than 9 years of age who have been properly vaccinated with one or more doses of seasonal influenza vaccine in the past should receive 1 dose of influenza vaccine per season thereafter.

**Evidence suggests moderate improvement in antibody response in infants, without an increase in reactogenicity, with the use of full vaccine doses (0.5 mL) for unadjuvanted inactivated influenza vaccines. This moderate improvement in antibody response without an increase in reactogenicity is the basis for the full dose recommendation for unadjuvanted, inactivated vaccine for all ages.

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CHOICE OF VACCINE PRODUCT

Population	Type(s) of influenza vaccine
Children 6-23 months	• **IIV4-SD** or **IIV4-cc** is recommended for this age group • If **IIV4-SD** is not available, any **IIV3-SD** or **IIV3-Adj** is recommended
Children **without** immune compromising or chronic health conditions, 2-17 years	• **IIV4-SD**, **IIV4-cc**, or **LAIV4** can be used • Any of the above quadrivalent vaccine formulations are recommended. If a quadrivalent formulation is unavailable, **IIV3-SD** should be used
Children **with** immune compromising conditions, with the exception of stable HIV infection*	• **IIV4-SD** or **IIV4-SD** is recommended • If **IIV4-SD** or **IIV4-cc** are not available, **IIV3-SD** is recommended
Children with severe asthma, medically attended wheezing in the previous seven days, or who are on aspirin or aspirin-containing therapy	• **IIV4-SD** or **IIV4-SD** is recommended • If **IIV4-SD** or **IIV4-cc** are not available, **IIV3-SD** is recommended
Children with other chronic health conditions	• **IIV4-SD, IIV4-cc, LAIV4,** and **IIV3-SD** can all be used without contraindications
Adults 18-59 years **without** chronic health conditions	• **IIV3-SD, IIV4-SD, IIV4-cc, RIV4, LAIV4**** can all be used unless contraindicated
Adults 18-59 years **with** chronic health conditions	• **IIV3-SD, IIV4-SD, IIV4-cc,** and **RIV4** are recommended • Please see the list on page one under the heading **People at high risk of severe disease, influenza-related complications, or hospitalization** for a list of chronic health conditions
Adults 60-64 years	• **IIV3-SD, IIV4-SD, IIV4-cc, RIV4** can all be used without contraindications
Adults 65+	• If available, **IIV4-HD** should be used for persons 65+ • If **IIV4-HD** is not available, **IIV3-SD, IIV3-Adj, IIV4-SD, IIV4-cc,** or **RIV4** can be used
Pregnant persons	• An age-appropriate **quadrivalent** or **trivalent IIV** should be used • **LAIV** should not be used
Healthcare workers	• Age-appropriate **trivalent** and **quadrivalent IIV** or **RIV** vaccines are recommended unless contraindicated • **LAIV** should not be used

* i.e., if the child is treated with HAART (highly active antiretroviral therapy) (for at least 4 months) and has adequate immune function;

** There is some evidence that IIV may provide better efficacy than LAIV in healthy adults

References: Centers for Disease Control and Prevention. Types of Influenza Viruses. (2021.) https://www.cdc.gov/flu/about/viruses/types.htm

National Advisory Committee on Immunization. Canadian Immunization Guide Chapter on Influenza and Statement on Seasonal Influenza Vaccine for 2022-2023. (2022.) https://www.canada.ca/content/dam/phac-aspc/documents/services/publications/vaccines-immunization/canadian-immunization-guide-statement-seasonal-influenza-vaccine-2022-2023/naci-2022-2023-statement.pdf

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