Sept. 2008

Influenza Immunization

Centre for Effective Practice

Developed by Bruce Kwok MD CCFP

With contributions from Mike Evans MD CCFP and the Department of Family and Community Medicine, University of Toronto

A Quick Reference for Health Care Providers

Influenza is a potentially severe respiratory illness that can result in increased office visits, antimicrobial use, hospitalizations, and death.[1] Each year, 20 to 25% of Canadians are infected by the influenza virus.[2,3] Children under 2 years old and the elderly are at highest risk for influenza-related complications and deaths.[4,5,6] In Canada, it is estimated that between 4000 to 8000 deaths are related to influenza each year.[3,7]

Prevention of this disease and its complications should be the goal of all health care providers.[8] You can help reduce the burden of influenza by reinforcing good personal hygiene practices and recommending influenza immunization to everyone over 6 months of age.

What is influenza immunization?

In Ontario, influenza immunization is accomplished through the administration of a *trivalent inactivated influenza vaccine*. This vaccine contains 3 different influenza virus strains. These are selected annually to reflect the anticipated strains that will be circulating that upcoming influenza season.[8] It takes approximately 2 weeks for most recipients to develop immunity following immunization.[9]

Who should get the influenza vaccine?

Influenza immunization should be offered to **everyone 6 months of age or older** who live, work or attend school in Ontario.

Special attention should be given to the following **high-risk groups**:

- Children 6 to 23 months of age.
- Adults 65 years of age and older.
- Adults and children with selected chronic health conditions.
- Residents of nursing homes and other chronic care facilities.
- Healthy pregnant women.
- Health care and other care providers in facilities and community settings who are capable of transmitting influenza disease to those at risk.
- Household contacts of people at high risk of influenza complications.
- Individuals who provide essential community services.
- People in direct contact during culling operations with poultry infected with avian influenza.

Effectiveness of influenza immunization

The effectiveness of influenza immunization varies depending on how well the influenza virus strains within the vaccine "match" the influenza virus strains circulating that season.

Healthy persons: Studies have shown that when the influenza vaccine was well matched, it prevented:

- Up to 80% of clinical influenza in healthy children.[4,11]
- Up to 51% of influenza-induced otitis media in children.[12]
- Up to 89% of lab-confirmed cases of influenza in healthy adults.[13,14]
- Up to 44% of health care provider visits and 43% of days off work for upper respiratory symptoms in healthy adults.[15]

Elderly persons: In adults 65 years of age and older, efficacy of the influenza vaccine diminishes, potentially due to a less responsive immune system.[9] However, this should not prevent immunization since protection against influenza-related complications is still likely to occur.[8]

Persons with respiratory disease: Influenza immunization was found to decrease the number of chronic obstructive pulmonary disease (COPD) exacerbations and improve quality of life scores in people with asthma.[16,17] Getting immunized with the influenza vaccine was not found to result in asthma exacerbations.[16]

continued on back...

Health care providers: Many health care providers who have serological evidence of influenza infection do not recall having symptoms of influenza or a respiratory infection.[18] Unfortunately, they can continue to transmit the virus to their patients during these periods.[19] Immunization helps decrease their risk of getting the disease as well as passing it on.[8]

How is the influenza vaccine given?

The recommended period for administration of the influenza vaccine is prior to late October.[8] However, the vaccine can still be given at any time up until the end of the influenza season (typically end of April).

Age	Dose (ml)	No. of Doses	Recommended Location†
6-35 months	0.25	1 or 2*	< 12 months old – thigh** ≥ 12 months old – deltoid
3-8 years	0.5	1 or 2*	deltoid
≥ 9 years	0.5	1	deltoid

** Anterolateral aspect of thigh † Given intramuscularly

* Children < 9 years old require 2 doses of influenza vaccine given 4 weeks apart if they are being immunized against influenza for the first time. Eligible children < 9 years old who have received 1 or more doses of the influenza vaccine in the past should receive 1 dose of influenza vaccine per season thereafter.[8]

Contraindications and precautions

- Individuals with a previous true allergic reaction to the influenza vaccine (reported incidence of 27 cases per million doses given).[20]
- Individuals with severe anaphylactic allergies to eggs, egg products, or any component of the vaccine.
- For individuals with severe febrile illness, immunization can be deferred until the condition has improved or stabilized.
- Minor illness, with or without fever, is **NOT** a contraindication.
- Pregnancy or breastfeeding is **NOT** a contraindication. Immunization can occur during any trimester.[21]

Side effects and harm

- The most frequent side effect of influenza immunization is soreness at the injection site. This typically lasts less than 2 days and rarely interferes with normal activities.[8]
- Individuals may complain of other side effects from immunization such as fever, malaise, or other systemic symptoms. However, most of these side effects occurred regardless of whether the individual received the influenza vaccine or a placebo injection.[15]
- ***Guillain-Barré Syndrome (GBS)***: Data is conflicting as to whether a causal relationship exists between modern influenza vaccines and GBS.[22] If one exists, the risk is estimated to be very low (no more than 1 to 2 cases per million doses).[4] Since the introduction of universal influenza immunization in Ontario, there has been no detectable increase in the number of new cases of GBS requiring hospitalization at the population level.[23] However, it may be prudent to avoid immunization in any individual known to have developed GBS within 8 weeks of getting the influenza vaccine previously.
- ***Thimerosal***: Most influenza vaccines available in Canada contain minute amounts of the preservative thimerosal. No studies have demonstrated an association between thimerosal-containing vaccines and adverse neurodevelopmental outcomes.[24,25]

All numbered references in this tool can be viewed at www.effectivepractice.org

For more information on the influenza vaccine visit :

www.gettheflushot.ca

To provide feedback on this tool email: flu.feedback@effectivepractice.org

Ontario