



THE FLU INFLUENZA

Influenza Immunization Guide for Pharmacists

Updated August 2012



CANADIAN
PHARMACISTS
ASSOCIATION

ASSOCIATION DES
PHARMACIENS
DU CANADA



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MAKE A HEALTHY CHOICE...Protect yourself and those around you.
GET THE FLU SHOT!



Disclaimer

Some provinces have legislation that requires that informed consent be obtained from the patient prior to administration of vaccines. Consult your provincial regulatory body for more information.

Conducting an Influenza Immunization Clinic

Introduction

The Canadian Pharmacists Association (CPhA), in collaboration with Immunize Canada (formerly Canadian Coalition for Immunization Awareness & Promotion), has developed the Influenza Immunization Guide so that pharmacists, following a step-by-step influenza program, can initiate immunization clinics in their pharmacies. Many of your patients will appreciate this clinic; it also serves as an opportunity for you to market your professional services. The key is in communicating the value of your services to your patients.

Goal

To increase overall number of patients immunized against influenza, with a focus on those individuals at high risk of influenza-related complications, those capable of transmitting influenza to individuals at high risk of complications and those who provide essential community services. The recommendations found in the guide are based on the National Advisory Committee for Immunization (NACI) **2012-2013** influenza immunization guidelines.¹

Suggested Timelines

August to September	<ul style="list-style-type: none">• Determine if you have adequate resources to support the delivery of a flu shot clinic. Consider the setting and staff availability.• If you will be administering the influenza vaccine yourself, schedule the date and time for the vaccination clinic. Ensure that you have all the information and documentation required, including patient consent forms and any liability forms.• If you do not have immunization authority, contact a local nursing agency to set up a date and time for the vaccination clinic (agency to provide dosing charts, patient consent forms and any liability forms and administer vaccinations).
September through flu season	<ul style="list-style-type: none">• Identify high-risk patients at the point of prescription pick-up and refills.
September to clinic date	<ul style="list-style-type: none">• Encourage patients to make an appointment.• Place Vaccination Reminder Stickers on all prescription vials and provide bag stuffers (templates available online) with all prescriptions.• Conduct telephone consultations with high-risk patients — discuss benefits of vaccination and scheduling an appointment, document consultation in your patient records.
3 weeks before clinic	<ul style="list-style-type: none">• Promote your vaccination clinic.• Send letters to physicians, local retirement communities and/or all patients in your pharmacy database informing them about the clinic.
2 weeks before clinic	<ul style="list-style-type: none">• Place ads in local newspapers and radio; display posters in your pharmacy.• Reconnect with vaccine supplier and nursing agency to confirm vaccine shipment and nurse attendance at clinic.
Mid-October to mid-November	<ul style="list-style-type: none">• Run Influenza Vaccination Clinic; document immunizations in your records or as agreed with local public health agency.
Following year	<ul style="list-style-type: none">• Send reminders to all past participants.

Be sure to involve staff members in your planning. Take note of tasks that can be delegated to pharmacy staff (e.g. pharmacy students and technicians).

QUICK FACTS ABOUT INFLUENZA

The Virus and the Vaccine

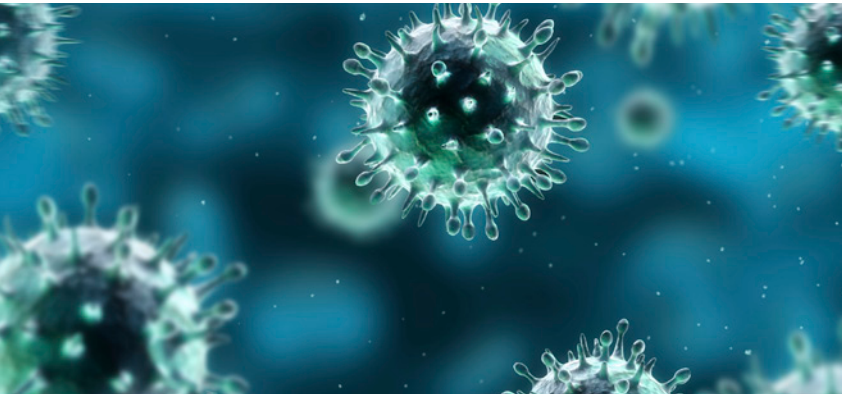
The Virus

Influenza (the flu) is a serious, acute respiratory illness that is caused by influenza viruses. It is spread by respiratory droplets from an infected person or direct contact with contaminated surfaces.

The flu is caused by influenza A and B viruses:

- Influenza A viruses are classified according to two different surface antigens. There are three different human subtypes of the Hemagglutinin antigen (H1, H2 and H3) and two subtypes of the Neuraminidase antigen (N1 and N2). Recently circulating strains (H3N2) have one H antigen and one N antigen which periodically undergo antigenic drift.
- Influenza B viruses have more stable antigens and so antigenic variation is less frequent but does occur.

Continual antigenic drift of the influenza virus means that a new vaccine, updated yearly with the most current circulating strains, is needed to protect against new infections.



The Vaccine

Antigens from two strains of influenza A and one strain of influenza B are selected based on the three most prevalent influenza strains expected to be circulating that year.

Components

A) The Virus

The World Health Organization (WHO) recommends that the trivalent vaccine for the 2012–2013 season in the Northern Hemisphere contain the following strains:

- A/California/7/2009 (H1N1)pdm09-like virus
- A/Victoria/361/2011 (H3N2)-like virus
- B/Wisconsin/1/2010-like virus (B Yamagata lineage)

Eight vaccines are authorized for use in Canada:

- 1) Fluviral[®], 2) Vaxigrip[®], 3) Agriflu[®], 4) Influvac[®], 5) Intanza[®], 6) Fludac[®] 7) Fluzone[®] and 8) FluMist[®].

Seven of the vaccines are trivalent inactivated vaccines (TIV) and the 8th, FluMist, is a live attenuated influenza vaccine (LAIV).

- Fluviral[®], Vaxigrip[®], and Fluzone[®] are known as split-virus vaccines because they are treated with an organic solvent to remove surface glycoproteins. Split-virus vaccines are less reactive and cause fewer side effects than a whole virus vaccine. Fluviral[®], Vaxigrip[®] and Fluzone[®] are authorized for use in adults and children 6 months of age or older.
- Agriflu[®], Influvac[®] and Fludac[®] are surface antigen, inactivated subunit vaccines. Agriflu[®] is authorized for use in adults and children greater than 6 months of age while Influvac[®] is only for persons 18 years of age or older. Fludac[®] on the other hand is only authorized for person ≥ 65 years of age.
- Intanza[®] is a new intradermal preparation only for persons 18 years of age or older.
- FluMist[®] is a LAIV that is administered by intranasal route. FluMist is authorized for use in persons 2–59 years of age.

B) The Excipients

- Thimerosal (0.01%) — a preservative that contains mercury (Fluviral[®] and multi-dose formulations of Fluzone[®] and Vaxigrip[®])
- Antibiotics — undetectable traces used during production (Vaxigrip[®], Intanza[®] and Fluzone[®] have neomycin, Agriflu[®] and Fludac[®] has neomycin and kanamycin and Influvac[®] and FluMist has gentamicin)
- Formaldehyde — in each vaccine except FluMist[®]

Immunity varies among individuals but generally lasts for 12 months.

Effectiveness of vaccine varies depending on:

- Age and immune status of the recipient
- Amount of influenza activity in the community
- Degree of similarity between the vaccine viral strain and the circulating strain of that season

Overall, the influenza vaccine is 60–80% effective in preventing influenza in healthy children and adults. Among the elderly, the vaccine has been shown to decrease the incidence of pneumonia, hospital admission and death.

Administration

- Intramuscular — (Fluviral®, Vaxigrip®, Agriflu®, Influvac®, Fluzone® and Fludac®) Use a 22–25 gauge needle, 2.2–2.5 cm for children, 2.5–3.8 cm for adolescents and adults. For children < 1 year old, inject at a 90° angle into the antero-lateral thigh. For persons ≥ 1 year old, inject at a 90° angle into the deltoid muscle.
- Intradermal — (Intanza®) Comes as a pre-filled micro-injection system, injected into the deltoid.
- Intranasal—(FluMist®) packaged as a prefilled single use glass sprayer

The influenza vaccine, including LAIV, can be given at the same time as other vaccines, provided that different administration sites and sets are used.



Table 1. Summary of Influenza Vaccinations

Product	Influvac®	Fluviral®	Agriflu®	Fludac®	Vaxigrip®	FluZone®	Intanza®	FluMist®
Vaccine Type	Inactivated – subunit	Inactivated – split virus	Inactivated – subunit	Inactivated - subunit	Inactivated – split virus	Inactivated – split virus	Inactivated – split virus	Live attenuated
Route of Administration	IM	IM	IM	IM	IM	IM	Intradermal (ID)	Intranasal spray
Authorized ages for use	≥ 18 years	≥ 6 months	≥ 6 months	≥ 65 years	≥ 6 months	≥ 6 months	≥ 18 years	2–59 years
Antibiotics (traces)	Gentamicin	None	Kanamycin Neomycin	Kanamycin Neomycin	Neomycin	Neomycin	Neomycin	Gentamicin
Thimerosal	No	Yes	No	No	Yes – multi-dose vials only	Yes – multi-dose vials only	No	No
Non-medical ingredients	Egg protein Formaldehyde Cetyltrimethyl-ammonium bromide(CTAB) Polysorbate 80	Egg protein Formaldehyde Sodium deoxycholate Sucrose	Egg protein Formaldehyde Polysorbate 80 CTAB	Egg protein Formaldehyde Polysorbate 80, CTAB	Egg protein Formaldehyde Triton X-100	Egg protein Formaldehyde Triton X-100 Gelatin Sucrose	Egg protein Formaldehyde Triton X-100	Egg protein Gelatin hydrolysate Sucrose Arginine Monosodium glutamate

* National Advisory Committee for Immunization (NACI) 2012–2013 influenza immunization guidelines

Criteria for Identifying Patients at High Risk of Influenza Complications

People at high risk of influenza-related complications, including:

- Adults (including pregnant women) and children with chronic conditions such as:
 - Cardiovascular disease
 - Respiratory disease (e.g. asthma, COPD)
 - Diabetes or other metabolic disease
 - Cancer, immunodeficiency, immunosuppression (due to underlying disease and/or therapy)
 - Renal disease
 - Persons who are morbidly obese (BMI \geq 40)
 - Anemia or hemoglobinopathy
 - Conditions that compromise the management of respiratory secretions
- Children and adolescents with conditions treated for long periods with acetylsalicylic acid
- All residents of nursing homes or other chronic care facilities
- Seniors aged 65 years or older
- Pregnant women
- Children aged 6 months to 59 months of age *
- Aboriginal peoples

* New priority recipients of the influenza vaccine for the 2012–2013 season

People capable of transmitting influenza to those at high risk of complications, including:

- Health care and other care providers
- Household contacts of those at high risk and to infants <6 months
- Members of a household expecting a newborn during influenza season
- Women at all stages of pregnancy or breastfeeding mothers
- Those providing regular child care to children 0–59 months of age
- Those who provide services within closed settings to persons at high risk

Others:

- People who provide essential community services
- People in direct contact with avian influenza infected poultry during culling operations
- Travellers even if they are not in the above priority groups
- Healthy people aged 5–64 years should be encouraged to receive the vaccine even if they are not in the above groups

Medications Indicative of High Risk **

Amlodipine	Nitroglycerin
Clopidogrel	Prednisone
Digoxin	Quinapril
Diltiazem	Ramipril
Enalapril	Salbutamol
Fosinopril	Verapamil
Glyburide	Warfarin
Insulin	Salmeterol
Lisinopril	Ipratropium
Metformin	Ritonavir

** For a more detailed list of medications and conditions indicative of high-risk patients, see Appendix A.

These medications were selected based on frequency of use and indication for high-risk disease; for example, salbutamol was chosen as an indicator for asthma and COPD. This will identify the majority of patients with either condition and will decrease the number of drugs to be searched.

What to do about egg allergies

- An egg allergy is no longer considered a contraindication for TIV. After extensive review, NACI concludes that egg-allergic individuals may receive the TIV without prior influenza vaccine skin test, based on an assessment of risk of severe allergic reaction to guide the method of immunization
- The data does not support this recommendation for LAIV (i.e. FluMist).
- Please see Canadian Society of Allergy and Clinical Immunology (CSACI) for more details. http://www.csaci.ca/include/files/CSACI_H1N1_Statement.pdf

Vaccination Administration Checklist

Check (✓)	Did I check that the...?
Before Vaccination:	
	Vaccine is indicated according to the recommended immunization schedule?
	Vaccine is indicated according to recipient's immunization record?
Pre-vaccination Counselling:	
	Consent was given by the vaccine recipient or guardian?
	Vaccine recipient received information regarding risks, side effects, precautions & benefits?
	Vaccine recipient has no contraindications or allergies to the vaccine or ingredients?
Vaccine Preparation:	
	Drug, dose and D.I.N. are correct?
	Vaccine has not expired?
	Vaccine was stored according to the manufacturer's requirements?
	Vaccine has been appropriately reconstituted and/or mixed?
Syringe or Needle Selection:	
	Appropriate needle gauge and length was chosen?
Administering the vaccine:	
	Recipient has been explained the administration procedure and restraint position?
	Vaccine provider washed his or her hands or used an alcohol?
	Vaccine vial and injection site was wiped with a disinfectant?
	Correct route has been chosen (ID, IM, SC)?
	Correct injection site has been chosen (forearm, thigh, buttock, deltoid)?
	Vaccine is administered at the correct angle and depth?
After Vaccination:	
	Needle was immediately placed in a yellow biohazard sharps container for safe disposal?
	Recipient understands the common side effects and how to report adverse events?
	Vaccine information was documented?
	Recipient waits at least 15 minutes (at least 30 minutes if they have an egg-allergy) after the vaccination for monitoring?

Storage

- Most vaccines are stored between +2° to +8°C at all times in complete darkness.
- The temperature of refrigerator should be measured, monitored and recorded for accuracy.
- Check the manufacturer's product leaflet for specific storage instructions.
- Pre-loading vaccines is strongly discouraged, except in clinical and hospital settings where proper labelling and transportation procedures are followed.
- Lyophilized vaccines should be reconstituted immediately before use.
- Vaccines should not be frozen unless stated in the manufacturer's product leaflet.
- Always check the expiry date of vaccines and only administer vaccines which are not expired.
- Disposal of vaccines must be in accordance to local or regional standards.

Pharmacist Administration of a Drug by Injection Regulations by Province

Province	Injections	Reimbursement	Description	Training	For more information see
BC	✓	\$ 10 / injection	Pharmacists can administer IM, SC or TD injections. Restricted to immunizations and treatment of anaphylaxis. Only patients > 5 years.	<i>Administration of Injections Program</i> with an online (8 hour) and live workshop (1 day) component.	College of Pharmacists of British Columbia: http://www.bcpharmacists.org/about_us/key_initiatives/index/articles70.php
AB	✓	\$ 20/day per patient for assessment and injection	Pharmacists can administer the flu shot to patients > 9 years old and the H1N1 shot to non-pregnant patients > 10 years old.	<i>Influenza Immunization Program.</i>	Alberta College of Pharmacists: https://pharmacists.ab.ca/nPharmacistResources/seasonal_flu.aspx
SK	✗	✗	—	—	—
MB	→	✗	Regulations impending	—	—
ON	→	✗	Imminent approval of draft regulations by Fall 2012 to allow pharmacists to provide influenza immunizations	<i>OPA Injection and Immunization Certificate Program</i>	Ontario College of Pharmacists: http://www.ocpinfo.com/client/ocp/OCPHome.nsf/web/Proposed+Amendment+to+the+Draft+Regulation
QC	→	✗	Regulations impending. Pharmacists can provide injections only for demonstration purposes	—	—
NB	✓	\$ 10 / injection	Pharmacists can administer drugs by injection to patients > 5 years old.	<i>Pharmacists must complete an accredited education program on administration of injections by IM and SC route. Ex) IIATP at Dalhousie University</i>	New Brunswick Pharmaceutical Society: http://www.nbpharmacists.ca/LinkClick.aspx?fileticket=Z970wXBQQYc%3d&tabid=261&mid=695
NS	→	✗	Regulations impending	—	—
PE	✗	✗	—	—	—
NL	✗	✗	—	—	—
YT	✗	✗	—	—	—
NT	✗	✗	—	—	—
NU	✗	✗	—	—	—

- ✓ = provincial regulations allow pharmacists to immunize and administer a drug by injection
- = provincial regulations expected to pass soon allowing pharmacists to administer vaccines
- ✗ = pharmacists are not allowed to administer vaccines or not paid for service

Appendix A

Medications indicative of high risk patients

Respiratory Medications

- Beclomethasone
- Budesonide
- Cromolyn
- Epinephrine
- Fenoterol
- Fluticasone
- Formoterol
- Ipratropium
- Montelukast
- Nedocromil
- Omalizumab
- Prednisone
- Salbutamol
- Salmeterol
- Terbutaline
- Theophylline
- Tiotropium
- Zafirlukast

Cancer, Immunosuppressive Agents

- Azathioprine
- Cyclosporine
- Daclizumab
- Methotrexate
- Mycophenolate mofetil
- Sirolimus
- Tacrolimus

Corticosteroids

- Cortisone acetate
- Dexamethasone
- Hydrocortisone

- Methylprednisolone
- Prednisolone
- Prednisone Antidiabetic Agents
- Acarbose
- Chlorpropamide
- Gliclazide
- Glyburide
- Insulins
- Metformin
- Nateglinide
- Pioglitazone
- Repaglinide
- Rosiglitazone
- Tolbutamide

Antiviral Agents HIV/AIDS

- Abacavir
- Amprenavir
- Delavirdine
- Didanosine
- Efavirenz
- Enfuvirtide
- Indinavir
- Lamivudine
- Nelfinavir
- Nevirapine
- Ritonavir/Lopinavir
- Saquinavir
- Stavudine
- Tenofovir
- Tipranavir
- Zalcitabine
- Zidovudine

Other

- Acyclovir
- Famciclovir
- Ganciclovir
- Ribavirin

Anemia And Hemoglobinopathy

Treatments

- Epoetin alfa
- Darbepoetin alfa
- Filgrastim

Cardiovascular Disease

Therapies (such as antiarrhythmics and heart failure medications):

- Beta Blockers
- ACE Inhibitors
- Angiotensin Receptor Blockers
- Calcium Channel Blockers
- Statins
- Other:
 - Amiloride
 - Amiodarone
 - Cholestyramine*
 - Clopidogrel
 - Chlorthalidone
 - Digoxin
 - Disopyramide
 - Ethacrynic acid
 - Furosemide
 - Gemfibrozil*
 - Hydrochlorothiazide

- Isosorbide dinitrate
- Metolazone
- Nicotinic acid*
- Nitroglycerin
- Propafenone
- Quinidine
- Spironolactone
- Triamterene

Antimicrobials

- Amphotericin B
- Ethambutol
- Fluconazole
- Griseofulvin
- Isoniazid
- Itraconazole
- Ketoconazole
- Nystatin
- Pyrazinamide
- Rifampin
- Streptomycin
- Terbinafine

*as secondary prevention

Please note: This is not an exhaustive list, but a summary of the most commonly used medications for the indicated conditions. Pharmacists must exercise professional judgment when using this list to screen for patients that may require the influenza vaccine.