Influenza Immunization Guide for Pharmacists

Updated August 2012
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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.

Suggested Timelines

| August to September | • 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 | • Identify high-risk patients at the point of prescription pick-up and refills. |

| September to clinic date | • 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 | • 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 | • 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 | • Run Influenza Vaccination Clinic; document immunizations in your records or as agreed with local public health agency. |

| Following year | • 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) Fluad® 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 Fluad® 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. Fluad® 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 Fluad® 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 Fluad®) 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 anterolateral 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

<table>
<thead>
<tr>
<th>Product</th>
<th>Influvac®</th>
<th>Fluviral®</th>
<th>Agriflu®</th>
<th>Fluad®</th>
<th>Vaxigrip®</th>
<th>FluZone®</th>
<th>Intanza®</th>
<th>FluMist®</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vaccine Type</td>
<td>Inactivated - subunit</td>
<td>Inactivated - split virus</td>
<td>Inactivated - subunit</td>
<td>Inactivated - split virus</td>
<td>Inactivated - split virus</td>
<td>Inactivated - split virus</td>
<td>Inactivated - split virus</td>
<td>Live attenuated</td>
</tr>
<tr>
<td>Route of Administration</td>
<td>IM</td>
<td>IM</td>
<td>IM</td>
<td>IM</td>
<td>IM</td>
<td>IM</td>
<td>Intradermal (ID)</td>
<td>Intranasal spray</td>
</tr>
<tr>
<td>Authorized ages for use</td>
<td>≥ 18 years</td>
<td>≥ 6 months</td>
<td>≥ 6 months</td>
<td>≥ 65 years</td>
<td>≥ 6 months</td>
<td>≥ 6 months</td>
<td>≥ 18 years</td>
<td>2–59 years</td>
</tr>
<tr>
<td>Antibiotics (traces)</td>
<td>Gentamicin</td>
<td>None</td>
<td>Kanamycin</td>
<td>Neomycin</td>
<td>Neomycin</td>
<td>Neomycin</td>
<td>Neomycin</td>
<td>Gentamicin</td>
</tr>
<tr>
<td>Thimerosal</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes – multi-dose vials only</td>
<td>Yes – multi-dose vials only</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

* 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 ≥ 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

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 **

<table>
<thead>
<tr>
<th>Amlodipine</th>
<th>Nitroglycerin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clopidogrel</td>
<td>Prednisone</td>
</tr>
<tr>
<td>Digoxin</td>
<td>Quinapril</td>
</tr>
<tr>
<td>Diltiazem</td>
<td>Ramipril</td>
</tr>
<tr>
<td>Enalapril</td>
<td>Salbutamol</td>
</tr>
<tr>
<td>Fosinopril</td>
<td>Verapamil</td>
</tr>
<tr>
<td>Glyburide</td>
<td>Warfarin</td>
</tr>
<tr>
<td>Insulin</td>
<td>Salmeterol</td>
</tr>
<tr>
<td>Lisinopril</td>
<td>Ipratropium</td>
</tr>
<tr>
<td>Metformin</td>
<td>Ritonavir</td>
</tr>
</tbody>
</table>

** 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](http://www.csaci.ca/include/files/CSACI_H1N1_Statement.pdf)
Vaccination Administration Checklist

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

**Storage**

- Most vaccines are stored between +2º to +8ºC 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

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

✔ = 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
- 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

### Other
- Acyclovir
- Famciclovir
- Ganciclovir
- Ribavirin

### Anemia And Hemoglobinopathy Treatments
- Epoetin alfa
- Darbepoetin alfa
- Filgrastim

### Cardiovascular Disease Therapies (such as antiarrythmics 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

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

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

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*as secondary prevention

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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.