Influenza/Pneumococcal Immunizer Education

Targeted Influenza Immunization Program
2014 - 2015

Author(s): NH CD Planning Team,
NH Workplace Health & Safety, NH Infection Control

Date: September 25, 2014
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ACKNOWLEDGEMENTS

The foundation for the Northern Health introduction to the annual *Influenza/Pneumococcal Immunizer Education* is the BCCDC Immunization Program Manual and the NH Decision Support Tools (DSTs) and resources that relate to influenza/pneumococcal polysaccharide immunization.

This document was compiled by:

The Northern Health Influenza Education Working Group; consisting of membership from the NH Communicable Disease Planning Team, NH Infection Control, NH Workplace Health & Safety and Public Health Nursing frontline members.

This resource is updated annually in consultation with:

- NH CD Planning Team
- NH WH&S
- NH Infection Control

This material has been prepared solely for use in Northern Health. The official version will be housed in the 'Clinical Teaching Tools and Video' folder on the Policies & Procedures OurNH site.
INTRODUCTION

Immunization is the cornerstone of influenza prevention (PHAC – CCDR 2010). The annual fall administration of publicly funded influenza vaccine greatly reduces the incidence, severity, duration and shedding of influenza viruses that in turn protects our communities from outbreaks of influenza.

This document has been developed to provide evidence-based education that addresses the sixteen ‘Immunization Competencies for BC Health Professionals’ as indicated by the BC Center for Disease Control (BCCDC). Influenza/Pneumococcal Immunizer Education consists of the parent document and a complementary power point presentation.

Goal:

The goal of the education power point presentation and the supporting Influenza/Pneumococcal Immunizer Education document is to support and serve as an education resource for:

- Public Health: novice nurses, experienced nurses new to Northern Health (NH) and student nurses in developing their competence to provide influenza/ pneumococcal vaccine through public health.
- Workplace Health & Safety: Influenza Clinic Nurses and Peer Immunizers.
- NH Community Vaccine Providers: Interested in participating in annual NH education sessions.
NURSES AND IMMUNIZATION

The College of Registered Nurses (CRNBC) and the College of Licensed Practical Nurses of BC (CLPNBC) are the regulatory bodies for registered nurses/nurse practitioners and licensed practical nurses in British Columbia. The Colleges receive their authority from the Government of B.C. through the Health Professions Act. Anyone who wants to practice nursing in B.C. and use the title “registered nurse”, “licensed graduate nurse” or “nurse practitioner” must be registered with CRNBC. Anyone who wants to practice nursing in B.C. and use the title “licensed practical nurse” must be registered with CLPNBC.

CRNBC and CLPNBC’s legal obligation is to protect the public through the regulation of registered nurses/nurse practitioners and licensed practical nurses:

- By setting requirements for initial registration and establishing minimum standards by which registrants must practice;
- By supporting registrants to meet these standards; and
- By acting if these standards are not met.

The College of Registered Nurses of British Columbia (CRNBC)

Scope of Practice: RNs can without an order, transfer of function or delegation required:

- Diagnose and manage conditions (including prevention), e.g., Anaphylaxis
- Administer certain medications to treat conditions or prevent disease/disorders, e.g., immunization for influenza
- RNs are required to have “additional education” to administer immunizations without an order (as determined by their employer) and CRNBC “strongly recommends” use of evidence-informed clinical decision support tools (“DSTs” or “CDSTs”) to guide practice, e.g., protocols, clinical practice guidelines, order sets, etc. (sic, CRNBC)

College of Licensed Practical Nurses of British Columbia (CLPNBC)

It is the responsibility of CLPNBC to protect the public through ensuring that Licensed Practical Nurses (LPNs) are professionally prepared to provide immunizations safely and competently. (CLPNBC, 2011)

Standards, Limits and Conditions (SLC) Of Practice for independent administration of pneumococcal and influenza vaccines (without an order):

- LPNs are limited to independent administration of influenza and pneumococcal immunization.

LPNs must:

- Successfully complete the BCCDC immunization course for Health Professionals and competency workshop approved by CLPNBC; as well as, recertify every 3 years by successfully completing the BCCDC re-certification course that includes both theoretical and skill-based components.
- When independently administering influenza and pneumococcal immunizations have an RN available in the same facility as the LPN to provide clinical guidance to the LPN upon request, including taking over the care of the client when necessary.

- Limit administration of immunization to clients over 4 years of age.

- Complete any employer orientation.

- Follow decision-support tools on immunization developed by the BCCDC.

- Submit proof of successful completion of both the theoretical and skills-based components to the CLPBC for issuance of a certificate authorizing the LPN to immunize.

**Note:** LPNs are not authorized, under the current Nurses (Licensed Practical) Regulation, to independently diagnose and treat anaphylaxis. There must be an RN, NP, or MD present in the facility at all times when LPNs administer immunizations.

**Standards, Limits and Conditions (SLC) for Administration of Immunizations with an order:**

- LPNs require a current immunization certificate **AND** a physician's order to administer any immunizations, beyond influenza and pneumococcal vaccines. An RN must always be on-site.

**Note:** While some employers may permit LPNs to administer flu and pneumococcal vaccines independently (RN must always be on site), other employers may still require the LPN to have a physician’s order before they can administer ANY immunization, including influenza and pneumococcal. This requirement is at the discretion of the employer, provided the SLC's are adhered to.

(CLPNBC, November 2010)

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**Key Resources:**

**CRNBC**
- [RN Scope of Practice Standards](#)

**CLPNBC**
- [Standards, Limits, and Conditions for LPNs’ Independent Administration of Influenza and Pneumococcal Immunizations](#)
NORTHERN HEALTH CLINICAL SUPPORT TOOLS AND EDUCATIONAL RESOURCES

Northern Health is responsible for ensuring there is an immunization competency program in place for public health nursing and WH&S Influenza Clinic Nurses/Peer Immunizers.

- **Public Health Nursing:**
  Prior to independent practice all nurses providing immunizations through the NH public health nursing program are to have their immunization competencies confirmed in accordance with NH Clinical Standard: Immunization Competency.
  - RN nursing students preceptoring in public health nursing adhere to the process for immunization competency as outlined in NH Clinical Standard: RN Nursing Student Practicum: Public Health Nursing.

- **WH&S Influenza Clinic Nurses/Peer Immunizers:**
  Nurses providing immunizations on behalf of the WH&S are to confirm their immunization competency as per the NH Clinical Standard: Immunizing Agents: Administration and Competency. This includes attending the NH Flu School and completing a Competency Validation for Influenza Immunizers and submitting it to their area Flu Program Nurse.

Evidence-informed clinical standards have been developed to support the additional education needs of nurses required to provide influenza and pneumococcal immunizations within NH. These include the following:

<table>
<thead>
<tr>
<th>NH CS: Nurses(registered) Regulations under the Health Professions Act Sections 6 and 7: Restricted Activities</th>
<th>RN practice within NH is guided by the following:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Health Professions Act</td>
</tr>
<tr>
<td></td>
<td>• CRNBC</td>
</tr>
<tr>
<td></td>
<td>• NH regional policies, decision support and education tools</td>
</tr>
<tr>
<td></td>
<td>• Individual nurse competence</td>
</tr>
</tbody>
</table>

| NH DST: Adoption of BCCDC CD Guidelines | Formal acknowledgement that NH PH uses the BCCDC CD Control Manual to guide NH CD practice. |

<table>
<thead>
<tr>
<th>The BCCDC CD Manual: Chapter 2 - Immunization</th>
<th>Evidence based guidelines supporting the appropriate use of publicly funded vaccines in BC.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Immunization Practice Resource</strong></td>
<td>Available to all PH nursing staff. To be used as a general resource in addition to orientation of nurses new to PH nursing in NH.</td>
</tr>
<tr>
<td><strong>Influenza /Pneumococcal Immunizer Education</strong></td>
<td>Education component for targeted Influenza/Pneumococcal immunization competency process.</td>
</tr>
<tr>
<td><strong>Mass Immunization Clinics</strong></td>
<td>‘Mass Immunization Clinics’ is a clinical support tool targeting the planning, roles/responsibilities, and implementation of a mass immunization clinic within public health.</td>
</tr>
</tbody>
</table>
IMMUNOLOGY & VACCINOLOGY

To understand how vaccines work immunizers need to know how the immune system learns to recognize and eliminate microorganisms that cause infectious diseases.

It is highly recommended that all Public Health Nursing/Workplace Health and Safety immunization providers are familiar with the Influenza/Pneumococcal key resources provided.

Key Influenza/Pneumococcal Vaccine Resources:

BCCDC Immunization Manual: Section VIII - Principles of Immunology
BCCDC Immunization Manual: Section VII - Biological Products

- Seasonal Trivalent Influenza Vaccine: Eligibility & Safety Issues Applicable to Influenza Vaccine pg. 31-31a
- FLUVIRAL® pg. 32a
- FLUAD* pg. 32b
- AGRIFLU® pg. 32c
- FLUMIST® pg. 33a-c
- Pneumo 23™ pg. 47-48, Pneumovax23 pg. 49-50

2014-2015 Product Monographs

- FLUAD*
- FLUMIST®
- AGRIFLU®
- FLUVIRAL®
- Pneumovax@23 / Pneumo 23™

HealthLink BC – Health Files

- Influenza (Flu) Vaccine (12d) –
- Influenza (Flu) Immunization: Myths & Facts (#12c)
- Pneumococcal Polysaccharide Vaccine (#62b)

Immunize BC (website):

- Immunization Communication Tool For Immunizers
- Live Attenuated Influenza Vaccine Q&A
- NACI – Statement on Seasonal Influenza Vaccine for 2014-2015

Additional Resources:

- Access to the Seasonal Flu Vaccine in Canada: How the Flu Shot Makes its Way from the laboratory to the Doctor’s Office (Health Canada, 2007)

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IMMUNOLOGY

Immunity is the ability of the human body to tolerate the presence of material indigenous to the body (self) and to eliminate foreign (non-self) material. (BCCDC)

Types of Immunity: There are two (2) types of immunity: Passive and Active

Passive Immunity involves receipt of antibodies from another source e.g. maternal antibodies or immunoglobulin. Protection is effective but is short in duration.

Active Immunity – occurs when the cells of the immune system ‘actively’ respond to a foreign substance in the body. Active immunity is further divided into two (2) categories:

- Innate Immunity – Involves protective mechanisms we are born with. E.g., skin, tears, saliva, pH, inflammatory response, macrophages, and dendritic cells.

- Adaptive Immunity – Cell Mediated Immunity (Immune response where T cells have the main role) and Humoral Immunity (mediated by B cells that react against foreign substances in the extracellular spaces of the body by producing and secreting antibodies).

NOTE: Influenza and Pneumococcal vaccines provide active immunity through an adaptive immune response.

See BCCDC Immunization Manual: Section VIII – Principles of Immunology for a detailed explanation on the various aspects of immunology.

VACCINOLOGY

The goal of both influenza and pneumococcal vaccines are to stimulate the immune system to produce an active immune response similar to that caused by the corresponding naturally occurring disease without causing the recipient to actually experience the disease or its complications.

With the exception of FLUMIST® which is a live attenuated vaccine, influenza and pneumococcal vaccines are inactive Vaccines.

Live Attenuated Vaccine:

- Contains a version of the living microbe that has been weakened in the lab so it cannot cause disease.

- Is a good ‘teacher’ of the immune system as they are the closest thing to a natural infection e.g., they elicit strong cellular and antibody responses and often confer lifelong immunity with only one or two doses.

Note: The remote possibility exists that an attenuated microbe in the vaccine could revert to a virulent form and cause disease. Vaccine recipients should attempt to avoid, whenever possible, close association with severely immunocompromised individuals (e.g., bone marrow transplant recipients requiring isolation) for at least 2 weeks following vaccination. In circumstances where contact with severely immunocompromised individuals is unavoidable, the client is to be offered an inactivated influenza vaccine.
Inactivated Vaccines:
- Produced by killing the disease-causing microbe with chemicals, heat, or radiation.
- Require additional doses to maintain a person’s immunity as they tend to stimulate a weaker immune system response than that of live vaccines. Hence the importance of an annual flu shot.
- Cannot cause disease even in severely immunocompromised individuals.
  - (National Institute of Allergy & Infectious Disease & AstraZeneca Canada, 2013)

See the BCCDC Immunization Manual: Section VIII – Principles of Immunology for details on the different types of vaccines.

NON-IMMUNOGENIC COMPONENTS OF INFLUENZA & PNEUMOCOCCAL POLYSACCHARIDE VACCINES:
In general the majority of reagents used in the vaccine development process are removed but “minute” amounts may remain in the final product:

**Adjuvant** – any substance added to vaccine that will enhance the immune response by degree or duration which makes it possible to reduce the amount of antigen per dose need to achieve immunity.

**Preservatives** – chemicals added to multi-dose, killed, or subunit vaccines to prevent serious secondary infections as a result of bacterial or fungal contamination of the vaccine e.g., Thimerosal, Phenol and Phenoxyethanol.

Thimerosal is a safe and effective preservative and has been used in some vaccines since the 1930s. It is made of thiosalicylic acid and mercury. The mercury is an organic form called ethyl mercury.

**It is important** not to confuse ethyl mercury with methyl mercury. In Canada, all routine childhood vaccines, with the exception of influenza, are thimerosal free.

<table>
<thead>
<tr>
<th>ETHYL MERCURY</th>
<th>METHYL MERCURY</th>
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</thead>
<tbody>
<tr>
<td>- Easily excreted from the body</td>
<td>- Slower to be excreted from the body</td>
</tr>
<tr>
<td>- Research shows no link between Thimerosal and Autism</td>
<td>- Causes Brain Damage</td>
</tr>
<tr>
<td></td>
<td>- Responsible for Pollution</td>
</tr>
</tbody>
</table>

**Antibiotics** – prevent contamination during viral cell culture.

**Egg/yeast proteins** – needed for growth of viruses. **Influenza vaccines** may have traces of egg proteins.

**Formaldehyde** – inactivates viruses and protein toxins. The amount of formaldehyde remaining in a vaccine after the completion of the manufacturing process is less than that naturally (continuously present in the blood, or turned over in a day) in the human body.
Stabilizers – help to protect the vaccine during the manufacturing process by controlling acidity, stabilizing antigens and preventing antigens from sticking to the sides of glass vials.

INFLUENZA / PNEUMOCOCCAL VACCINE IMMUNOGENICITY, EFFECTIVENESS & EFFICACY

Immunogenicity: the ability of an antigen to provoke an immune response

Efficacy: extent to which a vaccine provides a beneficial result under ideal conditions

Effectiveness: extent to which a vaccine provides a beneficial result under real-life conditions, e.g., age and immunocompetence of recipient and circulating strains.

Effectiveness of inactivated influenza vaccines correlates with the age and immunocompetence of the vaccine recipient and the degree of similarity between the virus strains used in the preparation of the vaccines and those prevailing in the population. (BCCDC, 2012)

The production and persistence of antibody after vaccination depends on numerous factors, including: age, prior and subsequent exposure to antigens and presence of immunodeficiency states. It is anticipated that immunity after administration of the inactivated vaccine lasts < 1 year.

However, in the elderly, antibody levels may fall below protective levels within 4 months. Data are not available to support a recommendation for the administration of a second dose of influenza vaccine in elderly individuals in order to boost immunity. Further, repeated annual administration of influenza vaccine has not been demonstrated to impair the immune response of the recipient to influenza virus.

• The influenza vaccine or flu shot is usually given as 1 dose. Children under 9 years of age who have never had an influenza vaccine need 2 doses. The second dose is important to raise their level of protection.

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Immunogenicity/ Effectiveness/ Efficacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influenza</td>
<td>• 70-90% efficacy in healthy children and adults</td>
</tr>
<tr>
<td></td>
<td>• Elderly: 56% effective in preventing respiratory illness; 50% effective in preventing hospitalization due to Pneumonia; 68% effective in preventing death.</td>
</tr>
<tr>
<td></td>
<td>• Facility residents: 30-40% effective against influenza illness; 50-60% effective against hospitalization and Pneumonia; and 85-95% effective in preventing death</td>
</tr>
<tr>
<td></td>
<td>• Yearly vaccination is required</td>
</tr>
<tr>
<td>Pneumococcal (Polysaccharide)</td>
<td>• 60 -70% effective in preventing invasive disease caused by serotypes in the vaccine (&gt; 80% in healthy young adults and 50-80% in the elderly and individuals with chronic illness)</td>
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INFLUENZA VACCINE DEVELOPMENT & LICENSING

To meet Canadian licensing standards and be considered for use in Canada, pharmaceutical companies must successfully conduct lab studies, animal studies and human studies.

This process for testing and developing a vaccine can take up to 10 years.

Stages of Vaccine Development (BCCDC)

The Biologics and Genetic Therapies Directorate (BGTD) under Health Canada is the Canadian authority that regulates biological drugs (products derived from living sources) for human use. (BCCDC)

Canadian Vaccine Licensing (BCCDC)
Flu Vaccine Production Timeline

- Decision on which 3 strains
- Manufacturers purchase hens’ eggs
- Virus strains sent to manufacturers
- Eggs inoculated with virus
- Virus multiplies in eggs
- Virus inactivated with chemicals
- Egg white removed / virus harvested
- Vaccine tested for purity & potency
- 3 vaccine strains blended
- Packaging into syringes / vials
- Licensure and release
- Shipping

Immunization begins

Jan  Feb  May  June-July  Aug  Sep  Oct

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INFLUENZA

THE VIRUS
Influenza viruses belong to the *Orthomyxoviridae* family. Types A, B and C (uncommon) all infect humans.

**Point of interest:**

![Types A can also infect](image)

**Influenza A** causes: Moderate to severe illness, Epidemics, Pandemics  
**Influenza B** causes: Milder epidemics  
**Influenza C** causes: No epidemics, sporadic cases, minor localized outbreaks

**Antigenic Variation**

Influenza viruses change frequently in terms of the surface proteins hemagglutinin and neuraminidase. Antigenic variation occurs in two different ways:

**Antigenic ‘drift’**: Small changes that occur continuously; tends to produce yearly epidemics.

- The National Advisory Committee on Immunization (NACI) of Canada, along with other countries and the World Health Organization (WHO), decide what strains to choose for the annual influenza vaccine. The decision is based upon the strains identified as being in circulation that year around the world and in North America.

**Antigenic ‘shift’**: Dramatic changes in virus proteins; produce occasional pandemics

**Point of Interest**: Webster Dictionary defines pandemic “as an outbreak of a disease occurring over a wide geographic area and affecting an exceptionally high proportion of the population.” E.g., Spanish Flu (1918-20), Asian Flu (1957-58), Hong Kong Flu (1968-69).
Historically the seasonal influenza vaccine contains three influenza viruses: one influenza A/H1N1 virus, one influenza A/H3N2 virus, and one influenza B virus.

Influenza viruses are named according to: type, the place the virus was first isolated, the isolate number, the year, and the subtype code:

```
Influenza A / Brisbane / 59 / 2007 / (H1N1)
```

This is the type (A or B)  The place where the virus was first isolated  The isolate number  Year  Subtype code

**INFLUENZA INFECTION**

Influenza, commonly known as the ‘flu’, is a respiratory illness caused by a virus that can cause infection of the nose, throat and lungs.

It is estimated that between 10-20% of the population becomes infected with influenza each year. Rates of influenza infection are highest in children aged 5-9 years, but rates of serious illness and death are highest in children aged <2 years, older persons (>65 years), and persons with underlying medical conditions. Influenza infection not only causes primary illness but can also lead to severe secondary medical complications, including viral pneumonia, secondary bacterial pneumonia and worsening of underlying medical conditions. It is estimated that in a given year, an average of 12,200 hospitalizations related to influenza, and that approximately 3,500 deaths attributable to influenza occur annually.” (NACI Statement: Seasonal Influenza Vaccine 2014-2015)

Among vaccine-preventable diseases, influenza causes by far the most deaths, outpacing all other vaccine preventable diseases combined. Hospitalized patients and residents of long term care are frequently more vulnerable to influenza than members of the general population. (BC`s Enhanced Influenza Protection Policy, 2013)

Unlike the common cold (runny nose, stuffy head), with influenza a person is more likely to suffer fever, cough, sore throat and have body aches and pains. Complications of influenza include damage to the lining of the respiratory tract, increased risk of secondary infections and subsequent hospitalization.

- Pneumonia is the most common complication of influenza and the most common cause of death from influenza. Influenza campaigns provide an opportunity to offer pneumococcal polysaccharide vaccine to all eligible clients.

Influenza is contagious and easily spread from person to person through coughing and sneezing within 1-2 meters or by touching objects or surfaces that have been handled by an infected person and then touching your eyes, nose or mouth. The flu virus can
survive up to 24-48 hours on hard surfaces such as doorknobs or for 8 -12 hours on softer/porous surfaces. The virus can also survive on the hands for up to five minutes. It is important to wash hands often, avoid touching surfaces in public places and avoid putting your hands in your mouth or touching your eyes or nose.

- Incubation period: Symptoms can begin about 1-4 days or an average of 2 days after a person is first exposed to the influenza virus.

- Period of communicability: People become infectious to others one day before symptom onset to 7 days after. They are most infectious in the few days after symptom onset although prolonged viral shedding is possible.

- Fever and other symptoms can usually last 7 -10 days with cough & weakness lasting up to 2 or more weeks.

**Clinical Parameters:**

![Diagram of Exposure, Symptom, and Most Infectious Periods]

**PREVENTING INFLUENZA**

**Annual Influenza Immunization**

Annual influenza immunization is the key! In our elderly & high risk population, immunization with influenza vaccine reduces clinical infection, hospitalization, pneumonia (secondary infection) and mortality. Vaccinating these people and those around them significantly reduces influenza incidence, severity, duration and shedding of virus, which in turn offers protection against outbreaks of influenza.

Northern Health provides free immunization to all employees in support of a healthy workplace (See: NH Clinical Standard: Influenza Outbreak Prevention and Management)

**Who Should Get Vaccine?**

- People at high risk
- People capable of transmitting influenza to those at high risk
- People who provide essential community service

(See Eligibility for more detail)
In addition to annual influenza immunization:

- Practice good habits for maintenance of physical and mental health

**Hand Washing**

- The most effective way to prevent the spread of germs from one person to another
- Key components: soap, warm water, friction & time (Wash for at least 15-20 seconds)
- Alcohol-based (60% - 90%) waterless antiseptic agents are acceptable when no sink is available
- Wash your hands frequently. Use soap and water or alcohol based hand sanitizer

**Cough Etiquette**

- Cough or sneeze into a tissue or your sleeve and be sure to discard the tissue in a waste receptacle and WASH your hands.

**Staying Home**

- Limit your interaction with others if you are symptomatic.
- Self-isolate and stay home if you are sick!
- If symptoms become worse arrange to see your health care provider. Remember that it is important to call ahead to let them know you are coming and that you have a fever or cough illness.

**Cleaning of the Environment**

- Influenza virus can live for 24-48 hours on hard surfaces
- Wash all hard surfaces with 10% bleach solution (1 part bleach to 9 parts water)

**Influenza – Key Resources**

- [BC Health File #12b: Facts About Influenza (the flu)]
2014-2015 INFLUENZA VACCINE

The influenza virus antigens addressed in the 2014-2015 influenza seasonal trivalent vaccines are unchanged from last year and include:

- A/California/7/2009 (H1N1)pdm09-like virus
- A/Texas/50/2012 (H3N2)-like virus
- B/Massachusetts/2/2012-like virus

The publicly funded influenza vaccines distributed by BCCDC for 2013-2014 include:

- **FLUAD**
- **FLUMIST®** (Note: Use Google-Chrome to open. Rt. Click on the link, copy & pasting the hyperlink into the Google-Chrome address bar.)
- **AGRIFLU**
- **FLUVIRAL®**

Point of interest:
The Provincial CD Policy Committee, who has representatives from each health authority, decides how the vaccine is to be distributed within the province. The distribution within Northern Health is organized and managed through the NH CD Planning Team.

INFLUENZA VACCINE DOSAGE

<p>| Influenza Seasonal Trivalent Vaccine – Route: IM |  |</p>
<table>
<thead>
<tr>
<th>Age Group</th>
<th>Dosage</th>
<th>No. of Doses</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 months – 8 years of age.</td>
<td>0.5 ml IM</td>
<td>1 or 2*</td>
</tr>
<tr>
<td>&gt; 9 years</td>
<td>0.5 ml IM</td>
<td>1</td>
</tr>
</tbody>
</table>

| Live Attenuated Influenza Vaccine (LAIV) – Route: Intranasal |
|-----------------|---------|-------------|
| Age Group | Dosage | No. of Doses |
| 2 – 8 years | 0.2 ml (0.1 ml/nostril) | 1 or 2* |
| 9 – 17 years | 0.2 ml (0.1 ml/nostril) | 1 |

*Previously un-immunized children under 9 years of age require 2 doses of vaccine with an interval of 4 weeks (as are less likely to have had a prior priming exposure to an influenza virus so special effort is warranted to ensure that a two-dose schedule is followed for previously unvaccinated children)
• 2nd dose is not required if the child has ever received one or more doses of influenza vaccine from a previous year

In infants < 6 months of age, influenza vaccine is less immunogenic than in infants and children 6-18 months. Currently seasonal trivalent influenza vaccine (IM) is not recommended for children < 6 months of age. Nurses are to use 6 month calendar age to determine eligibility.

• Important: LAIV (Flumist®) is not used in children under 2 years of age.

ELIGIBILITY

The influenza vaccine is recommended and provided for free in British Columbia to those people deemed at high risk, those capable of transmitting influenza to those at high risk, and people who provide essential community services. Up to-date eligibility criteria for all vaccines can be located in either of the following:

• BCCDC Immunization Manual - Section VII- Biological Products
  o Seasonal Vaccine – pg. 31
  o Pneumococcal Polysaccharide Vaccine – pg. 49

• BC Health Files:
  o # 12d: Influenza (Flu) Vaccine
  o #62b: Pneumococcal Infection: Polysaccharide Vaccine

Note: Non-publicly funded vaccine is available for purchase through private providers, such as physician/primary care providers and pharmacies.
PNEUMOCOCCAL POLYSACCHARIDE VACCINE

Pneumococcal bacteria can cause serious and life-threatening infections including meningitis and septicemia. Permanent complications of infection include brain damage and deafness. The bacteria are spread person to person by coughing, sneezing or close face-to-face contact. The germs can also be spread through saliva or spit, e.g., kissing or sharing of food, drinks, or mouth guards used for sports.

Pneumococcal bacteria are quite resistant to antibiotics and pneumococcal pneumonia is a common complication of influenza. Although this vaccine is available all year, flu season is a good opportunity to raise awareness and target large numbers of eligible people.

Pneumococcal polysaccharide vaccine contains 25 µg of capsular polysaccharide from each of 23 types of pneumococci which accounts for approximately 90% of cases of pneumococcal bacteremia and meningitis. Important to note that the six serotypes that are most often found to be resistant to one or more antibiotics are included in the pneumococcal polysaccharide vaccine. (Canadian Immunization Guide, 2006)

The immune response to a pure polysaccharide vaccine is typically T cell-independent which means:

- The antibodies made in response to these vaccines are mostly of the IgM class and immunologic memory is not produced; meaning protection will wane over time. Despite this waning, reinforcement doses are only recommended for specific high risk medical conditions.

- Polysaccharide vaccines are not immunogenic in children < 2 years of age

The vaccine is 60-70% effective in preventing invasive disease caused by serotypes in the vaccine (>80% in healthy young adults and 50-80% in the elderly and individuals with chronic illness) (BCCDC)

There are specific timing considerations between conjugate and polysaccharide presentations of the same antigen. Special attention must be paid to timing of vaccines when administering pneumococcal polysaccharide and pneumococcal conjugate vaccines. Utilize the BCCDC Immunization Manual: Section VII – Biological Products for determining scheduling of the applicable pneumococcal vaccine to be administered.

Pneumococcal Polysaccharide Vaccine – Key Links:

Eligibility criteria can be located in the following:

- BCCDC Immunization Program Manual: Section VII – Biological Products
- Pneumococcal Polysaccharide vaccine (Note product being used.)

Important: Confirm: Eligibility Criteria, Timing of Vaccine, and Dose/Site/Route
CO-ADMINISTRATION OF INFLUENZA VACCINE

FLUAD*, FLUVIRAL®, and AGRIFLU* are inactivated vaccines. FLUMIST® is a live attenuated vaccine. Inactivated vaccines can be administered concurrently with, or at any time before or after, the administration of another inactivated vaccine or a live vaccine.

- **Important:** Health care providers providing live vaccines (e.g., Varicella, MMR) need to inquire as to the type of flu vaccine the client received to ensure the appropriate interval between administration of two live vaccines are met.

Influenza (IM) and Pneumococcal Polysaccharide vaccines are to be administered as separate injections, preferably in separate limbs.

- If the option is for one limb then the Influenza will be given IM and the Pneumococcal can be given SC or IM.
- When two (2) or more biological products are to be administered, it is preferable, but not necessary to use different limbs. Use of different limbs assists in differentiation of local adverse events following immunization. (BCCDC)
- When administering two (2) or more biological products in the same limb, separate the injections by as much distance as possible. A separation of 2.5cm (1”) is preferable so that local reactions are unlikely to develop. (BCCDC)

**Co-administration of vaccines – Key Links:**

- BCCDC Immunization Program Manual:
  - Section IV – Administration of Biological Products (3.0 Considerations for the Scheduling and Administration of Multiple Injections)
  - Section VII - Biological Products
    - Safety Issues Applicable to Influenza Vaccines
COMMUNICATION

‘A higher standard of safety is generally expected of vaccines compared to other medical interventions. As vaccines are given to healthy people, especially infants and children, there is a low tolerance for adverse events. It is the responsibility of the health care provider to communicate effectively with parents and individuals, using an evidence-based approach, regarding the benefits and risks of influenza and pneumococcal immunizations.’ (BCCDC)

As effective decision making is best done in partnership between the health care provider and the parent or client, utilize a client-centered approach to:

- Communicate current knowledge, taking into account what an individual already knows about influenza/pneumococcal vaccine and/or infection and the level of detail requested. Utilize resources available e.g., HealthLink BC Files, websites (Immunize BC, BCCDC, Canadian Pediatric Society)
- Respect differences of opinion about immunization. When an individual expresses reluctance or refusal to immunize themselves or their children with influenza/pneumococcal vaccine, assess both the strength of their beliefs and the underlying reasons for their beliefs and actions.
- Represent the benefits and risks of influenza/pneumococcal polysaccharide vaccines fairly and openly. Compare the known and theoretical risks of the vaccine(s) with the known risks associated with actual influenza/pneumococcal infection.

To support our public health immunizers, the Communications Liaison Nurse, through collaboration with Northern Health, ensures that evidence-based sources of information on current issues related to immunization are located on the NH Immunization and Resources iPortal site. These resources are to assist in immunization discussions and to support responses following an assessment of client knowledge, attitudes and beliefs regarding immunization.

In addition, the Communication Liaison nurse works with NH Communications and the regional flu coordinators to ensure that promotional materials (posters, newspaper ads and radio ads) are organized to inform the public of upcoming influenza clinics. Questions regarding these materials are to be directed to the appointed health unit flu coordinators who in turn will connect with the regional flu coordinators and the Communications Liaison Nurse.

NH EMPLOYEES:

Media: It is not unusual for HCPs to be approached locally by the media for comment during an immunization campaign. The Communications department needs to know prior to any interviews. Please review NH Clinical Standard: Communication To/With the Media: Permanent Spokespersons in regards to working with the Media.

See 'Communication – Key Resources' on the next page.
Communication – Key Resources:

- NH Clinical Standard: Communication to/with the Media: Permanent Spokesperson

- BCCDC Immunization Manual: Section 1A - Introduction
  - BCCDC Immunization Communication Course

- Immunization Information and Resources iPortal site (Public Health)

- Immunize BC: www.immunizebc.ca
  - Immunization Communication Tool for Immunizers
  - Live Attenuated influenza vaccine screening questions

- Immunize Canada: www.immunize.ca
  - Influenza Immunization Awareness Campaign 2014-2015 (Free Resources)

- BC Health Files:
  - HealthFile #12a: Why Seniors Should Get The Influenza (Flu) Vaccine
  - HealthFile #12b: Facts about Influenza (the Flu)
  - HealthFile #12c: Flu Immunization: Myths & Facts
  - HealthFile #12d: Inactivated Influenza (Flu) Vaccine
  - HealthFile #12e: Live Attenuated Influenza (Flu) Vaccine
  - HealthFile #62b: Pneumococcal Infection: Polysaccharide Vaccine
  - HealthFile #50a: Your Baby’s Immune System and Vaccines
  - HealthFile #50b: The Benefits of Vaccinating Your Child
  - HealthFile # 50c: Childhood Vaccines are Safe
  - HealthFile #50d: Childhood Vaccines: What is in the Vaccines and Why
VACCINE ADMINISTRATION

CLIENT ASSESSMENT

Taking into consideration the client's age, health status and history, review the client's immunization record to determine which immunizing agents are recommended.

Contraindications – A condition that significantly increases the chance that a serious adverse event will occur if the vaccine is given.

- Anaphylaxis to a previous dose or to a component of the vaccine
- Guillain-Barre Syndrome (GBS) within 8 weeks of a previous dose of influenza vaccine
  - Risk of GBS estimated to be 1 excess case per million doses of influenza vaccine (BCCDC, 2012)
  - Occurred in adults in association with the 1976 swine influenza vaccine. Extensive review of the studies indicates that evidence was inadequate to accept or reject a causal relation from the 1976 vaccine. (CCDR, 2011)
  - In general a consistent finding in cases is that GBS appears 6 weeks after an infection in 2/3's of patients. Infections identified included: Campylobacter, Cytomegalovirus, Epstein-Barr, Mycoplasma Pneumonia and infrequently, Influenza as well.

Precautions - A condition that may increase the chance of an adverse reaction following immunization or compromises the ability of the vaccine to produce immunity.

- History of Hodgkin’s disease (Pneumococcal Vaccine) (Refer to BCCDC Immunization Manual: Section VII-Biological Products Pneumo 23™ pg. 48, Pneumovax® 23 pg. 50)
- Ocular-Respiratory Syndrome (ORS) (Influenza Vaccine)
  - First noticed in the 2000/01 influenza season
  - An estimated 5 – 34% of people experience another episode, usually milder, with subsequent influenza vaccination.
  - If mild to moderate ORS: can usually safely re-vaccinate (bilateral red eyes, cough, sore throat, hoarseness and facial swelling, lower resp. tract symptoms)
  - History of severe ORS: Consult physician before vaccinating (wheeze, chest tightness/discomfort, difficulty breathing or severe throat constriction/ difficulty swallowing)

Special Consideration - Egg Allergic Individuals (Influenza Vaccine)

- “Egg allergic individuals (including those who have experienced anaphylaxis following egg ingestion) can be immunized with inactivated influenza vaccine in any setting attended by immunization service providers who are following standard vaccine administration practices” (August 2014, BCCDC)
- “Given the lack of data about egg allergy following the administration of the live attenuated Flumist, this vaccine is not currently recommended for egg allergic
individuals.” Instead offer an **inactivated** seasonal trivalent influenza vaccine. (August 2014, BCCDC)

**Client Health Assessment – Key Resources**

- BCCDC Immunization Manual:
  - Section IV - Administration of Biological Products
  - Section VII – Biological Products:
    - Influenza Trivalent Vaccines pg. 31-34c
    - Pneumococcal Polysaccharide Vaccines pg. 47-50
- ImmunizeBC - LAIV Screening Questions

**MANAGEMENT OF PAIN/ANXIETY BEFORE AND DURING IMMUNIZATION**

Review BCCDC Immunization Program Manual:  **Section IVB- Reducing Immunization Injection Pain**

- Foster culture of empathy and respect
- Structure the environment
- Calming and distracting techniques
- Use of topical anesthetics

The Immunization Information and Resources Public Health iPortal site is an additional area in terms of reviewing: Reducing Immunization Injection Pain - Q&A, power point and training materials.

**Management of Pain/Anxiety Before and During Immunization – Key Resources:**

- BCCDC Immunization Manual: **Section IVB- Reducing Immunization Injection Pain**
- Immunize BC: Resource to address pain associated with immunization
- NH Public Health:  **Immunization Information and Resources**
INFORMED CONSENT

Informed consent is an essential part of providing immunizations. As immunization providers we have a legal and professional responsibility to obtain informed consent prior to immunizing.

Informed consent should be client-centered and consistent. All clients should be provided with standard information and be given the opportunity to ask questions and receive answers e.g.:

- Benefits of vaccination
- Risk of not getting vaccinated
- Eligibility for the vaccine(s)
- Common and expected adverse events
- Possible serious or severe adverse events and their frequency
- Contraindications
- Disease(s) being prevented

Follow the steps outlined in the BCCDC Immunization Manual – Section 1B – Informed Consent - 4.0 Step by Step Process for Obtaining Informed Consent.

A copy of the appropriate HealthLink BC HealthFile document(s) should be provided to each client as part of the consent process. The main Health Link site is at www.healthlinkbc.ca

HealthLink files are updated frequently so be sure to return to the site regularly for updated information.

- Seasonal Influenza Vaccine
- Pneumococcal polysaccharide vaccine

A mature minor has the authority to give, refuse or revoke consent for their own immunization. There is no legal age of consent for health care in BC; instead, a minor’s ability to consent depends upon the minor’s level of maturity. Mature minor authority takes precedence over parental authority. (BCCDC, 2012)

If there is a concern that an adult is not capable of giving consent, written consent from their representative may be required. Ideally, written consent from the “guardian or committee/representative/temporary substitute decision maker” for the client is signed in advance and the form is brought to the immunization clinic with the client. Information to guide this process is located in Section 1B – Informed Consent of the BCCDC Immunization Manual.

Consent Forms - Located on the BCCDC website:

- Consent for Influenza Vaccines for Adults Assessed as Incapable of Giving Informed Consent
- Consent for Pneumococcal Vaccines for Adults Assessed as Incapable of Giving Informed Consent
**PREPARING THE VACCINE**

Review client history and potential immunization precautions/contraindications.

Check the correct immunizing agent **THREE** times:

- When removing from fridge/cooler
- When drawing up/reconstituting
- Before immunizing agent administered

Check the product for irregularities, damage or particulate matter.

**Drawing up Biological Products**

Gently swirl immediately before drawing or administering the prefilled syringe (FLUAD*/AGRIFLU®) to ensure the contents are fully dispersed.

**Preloading of syringes** is discouraged because of the uncertainty of product stability in syringes, risk of contamination, increased potential for administration errors and biological product waste. (BCCDC, 2012)

**Problems Associated with Preloading of Syringes:** (BCCDC, 2012)

- Once vaccine is inside the syringe, it is difficult to tell which vaccine is which; this may lead to administration errors.
- Preloading syringes leads to vaccine wastage and increases the risk of vaccine storage under inappropriate conditions.
- Most syringes are designed for immediate administration and not for vaccine storage. **Bacterial contamination and growth** can occur in syringes prefilled with vaccines that do not contain bacteriostatic agents, such as the vaccines supplied in single-dose vials.
- No stability data are available for vaccines stored in plastic syringes. Vaccine components may interact with the plastic syringe components with time and thereby reduce vaccine potency.

---

**Informed Consent – Key Resources:**

- **BCCDC Immunization Manual:**
  - Section 1B – Informed Consent
    - Checklist for Obtaining Informed Consent for a Vaccine Series
    - Mature Minor Consent (See Step 1 & Step 2)
    - Immunization of Adults Assessed as Incapable of Giving or Refusing Informed Consent (Section 7)
  - Section IV - Administration of Biological Products
- **NH Immunization Information and Resources** Public Health iPortal site
As per the CRNBC practice standard for Mass Immunization Clinics, if a nurse is going to pre-draw:

- Read product monograph for vaccine specific warnings
- Give only what they themselves have pre-drawn
- Draw up only what they can reasonably give
- Do not leave in a cooler unattended - give your pre-drawn vaccines prior to taking breaks

Additional considerations:

- It is not necessary to change needles after drawing up unless the needle is damaged or contaminated.
- When drawing up multiple vaccines for one client, use a system for identifying each agent (i.e., labeled bacon tray).

### Preparing the Vaccine - Key Resources:

- BCCDC Immunization Manual: [Section IV- Administration of Biological Products](#)
- CRNBC Practice Standard: [Mass Immunization Clinics](#)
- [NH Mass Immunization Clinics](#) (New!)  Note: Resource pertains to PH Mass Immunization Clinics
INFLUENZA/PNEUMOCOCCAL VACCINATION: ROUTES

Use clinical judgment to select appropriate injection site and needle size based upon:

- recommended route of administration for the particular influenza/pneumococcal vaccine
- client’s age
- adequacy of muscle mass

Inspect injection site for the things which may interfere with the absorption of the influenza/pneumococcal vaccine(s), e.g. bruises, scars, inflammation

SITES, NEEDLE SIZE, AND POSITIONS FOR INTRAMUSCULAR INJECTIONS

<table>
<thead>
<tr>
<th>Age</th>
<th>Infants (&lt; 12 months)</th>
<th>Children &gt; 12 months</th>
<th>Older Children &amp; Adults</th>
</tr>
</thead>
<tbody>
<tr>
<td>Needle</td>
<td>25 gauge 1” needle</td>
<td>25 gauge 1” needle</td>
<td>1-1 1/2” needle</td>
</tr>
<tr>
<td>Best Site</td>
<td>Vastus Lateralis</td>
<td>Deltoid</td>
<td>Deltoid</td>
</tr>
</tbody>
</table>

Needle Length:

- Administer well within muscle to avoid increased local irritation, discomfort and to ensure deposit of the vaccine to the correct site.

Landmarking:

- **Vastus Lateralis** - Divide the space between the trochanter major of the femur and the top of the knee into 3 parts; draw a horizontal median line along the outer surface of the thigh. The injection site is in the middle third, just above the horizontal line. (BCCDC, 2012)

- **Deltoid** – Injection arm should be held close to the client’s body. Define site by drawing a triangle with its base at the lower edge of acromion and its peak above...
the insertion of the deltoid muscle. The injection site is in the center of the triangle. (BCCDC, 2012)

**Technique:**

- Clean the site with a cotton pad/swab/ball moistened with 70% isopropyl alcohol-allow to dry.
- Insert the needle quickly at a 90° into muscle
  - If muscle mass is small, grasp body of muscle between thumb and fingers before and during the injection, e.g., slightly built elderly person.
- Rapidly inject and then remove the needle in one swift motion, immediately applying pressure to the site with a dry cotton pad/swab/ball for 30 seconds. To minimize damage to the underlying tissues do not massage the site.
- Aspiration is not recommended as there is no data to document its necessity prior to IM injection of biological products. There are no large blood vessels at the recommended immunization site. Aspiration may increase the time it takes to immunize and is more painful for the client.
- Applying pressure for 30 seconds minimizes bruising

**SITES, NEEDLE SIZE, AND POSITIONING FOR SC INJECTIONS**

<table>
<thead>
<tr>
<th>Age</th>
<th>&gt; 12 mo. Of age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Needle</td>
<td>25 – 27 gauge 5/8” – 7/8” needle</td>
</tr>
<tr>
<td>Best Site</td>
<td>Lateral aspect of the upper arm</td>
</tr>
</tbody>
</table>

**Technique:**

- Grasp a skin fold of fatty tissue at site with thumb and forefinger. Measure skin fold from top to bottom. Be sure needle is approximately one half this length.
- Clean the site with a cotton pad/swab/ ball moistened with 70% isopropyl alcohol
- Insert the needle quickly and firmly, with the bevel facing upwards, at an angle of 45°
  - For an obese client, use a longer needle and inject at a 90° angle to reach the subcutaneous tissue
- Release the skin, rapidly inject the pneumococcal vaccine and remove the needle in one quick motion.
- Apply pressure to the injection site for 30 seconds with a dry cotton pad/swab/ball. To minimize damage to the underlying tissues do not massage the site. (BCCDC, 2012)
Additional Considerations:

Multiple Injections - When administering two biological products in the same limb, separate the two injections by a distance of at least 1 - 2 inches so that local reactions are unlikely to overlap.

Mastectomy – Site depends on whether client has had a single or double mastectomy:

- Single: Give one or both vaccines IM in the arm opposite to mastectomy
- Double: Give one or both vaccines IM in the Vastus Lateralis

Injection Sites, Needle Size, and Positioning for IM Injections - Key Resources:

- BCCDC Immunization Manual: Section IV- Administration of Biological Products
- BCCDC’s Video’s on Injection Land marking and Technique
  - Intramuscular Injection: Deltoid Site; Vastus Lateralis Site
  - Subcutaneous Injection: Upper Arm Site

INTRA-NASAL ADMINISTRATION

How to administer live attenuated influenza vaccine (Flumist®):

Technique:

- Check the expiration date: Product must be used before the date on the sprayer label.
- Remove rubber tip protector. Do not remove dose-divider clip at the other end of the sprayer.
- With the patient in an upright position, place the tip just inside the nostril to ensure FluMist® is delivered into the nose.
- With a single motion, depress plunger as rapidly as possible until the dose divider clip prevents you from going further.
- Pinch and remove the dose divider clip from plunger.
- Place the tip just inside the other nostril and with a single motion, depress plunger as rapidly as possible to deliver remaining vaccine.

(AstraZeneca Canada Inc./ ImmunizeBC)

Intranasal Administration of Live Attenuated Influenza Vaccine (LAIV) - Key Resources:

- Video: How to administer the LAIV (Flumist)
- Poster: How to administer Flumist
POST VACCINATION – CLIENT INFORMATION

- Recommend **15 minute wait** post immunization
  - All vaccine recipients are to remain under supervision for at least 15 minutes post immunization even if they have had the same product in the past.
  - 30 minutes is a safer duration when the person has had a prior allergic reaction to a biological product.
  - If clients choose not to remain the 15 minutes post immunization, inform them (or their parent/guardian) of the signs and symptoms of anaphylaxis and instruct them to obtain immediate medical attention should symptoms occur.

- Instruct client on expected side effects and comfort measures, i.e., acetaminophen
  - Particularly with parents of little children it is helpful to have the PH pamphlet ‘*What to do after your child’s immunization*’ available and encourage them to call if they have any questions.

- Confirm when the next vaccine(s) is due, e.g., children due for 2nd dose of influenza vaccine

- Encourage reporting of adverse events to the local health unit

- Provide a copy of appropriate BC HealthLink file

- Provide a completed personal immunization record

- Provide contact information and inform client public health is available if they have any further questions

**Note:** A 15 Minute Wait – Poster is available through NH Document Source (# 10-414-6078)
DOCUMENTATION

Documentation of immunization(s) serves several purposes:

- Provides client a record of service
- Supports maintenance of an accurate record of the client’s vaccinations
- Facilitates surveillance and evaluation of immunization coverage

Influenza and Pneumococcal Polysaccharide vaccines administered to an individual are recorded in three locations:

<table>
<thead>
<tr>
<th>The Client's personal immunization record</th>
<th>Each person who is immunized will be given a permanent personal immunization record. Individuals should be instructed to keep the record in a safe place and bring it to subsequent immunization visits.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Health Nursing:</td>
<td>Personal Immunization Record</td>
</tr>
<tr>
<td>WH&amp;S Influenza Clinic Nurses/Peer Immunizers:</td>
<td>Personal Immunization Record</td>
</tr>
</tbody>
</table>

Author(s): insert titles here
Date Issued (I), REVISED (R), reviewed (r): insert dates and applicable designations here

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<table>
<thead>
<tr>
<th>The Clinic record maintained by the health care provider who gave the immunization</th>
<th>Public Health Nursing:</th>
</tr>
</thead>
<tbody>
<tr>
<td>NH Public Health Influenza and Pneumococcal Clinic Tally Form (10-400-7009) - NH form used to document client demographics, consent and vaccine administered</td>
<td></td>
</tr>
<tr>
<td>• All influenza immunization encounters to be documented using this form. Copies will be available for all influenza clinics. (See Surveillance)</td>
<td></td>
</tr>
<tr>
<td>• All Pneumococcal Polysaccharide immunization encounters to be documented on this form when pneumococcal polysaccharide vaccine has been administered in a mass clinic setting and access to the client electronic record system is not available.</td>
<td></td>
</tr>
<tr>
<td>WH&amp;S Influenza Clinic Nurses/Peer Immunizers: Complete the Immunization Record provided by your Flu Program Nurse for every employee immunized within the WH&amp;S Influenza program.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The Public Health Electronic Information System(s)</th>
<th>Influenza/Pneumococcal vaccines are to be documented in the NH electronic information systems as per the following:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Influenza Vaccine:</strong></td>
<td></td>
</tr>
<tr>
<td>• All children aged 6 months to 8 years of age inclusive are to have their influenza vaccinations immunization recorded in their electronic record.</td>
<td></td>
</tr>
<tr>
<td>• If a child started a two dose series at 8 years of age, and completes this series at 9 years of age, the 2nd dose is to be recorded into their electronic record. This includes influenza immunization administered by other providers, e.g., physicians, First Nations, pharmacists.</td>
<td></td>
</tr>
<tr>
<td>• Seasonal influenza is entered as <em>dose one</em> each year. <em>The only exception is the 2 dose series</em></td>
<td></td>
</tr>
<tr>
<td><strong>Pneumococcal Vaccine:</strong></td>
<td></td>
</tr>
<tr>
<td>• All pneumococcal vaccines are entered into the client’s electronic record.</td>
<td></td>
</tr>
<tr>
<td><strong>Adverse Events:</strong></td>
<td></td>
</tr>
<tr>
<td>• Vaccines associated with an adverse event are recorded in the client’s electronic record. (See Adverse Events)</td>
<td></td>
</tr>
<tr>
<td><strong>Exemptions:</strong></td>
<td></td>
</tr>
<tr>
<td>• Exemptions are to be entered as per the NH electronic standards e.g., parent/guardian/client refusal, contraindications.</td>
<td></td>
</tr>
<tr>
<td><strong>Notes:</strong></td>
<td></td>
</tr>
<tr>
<td>• Client specific immunization plans are to be documented as per NH electronic standards.</td>
<td></td>
</tr>
</tbody>
</table>
ADVERSE EVENT FOLLOWING IMMUNIZATION

‘An adverse event following immunization is defined as an untoward event temporally associated with immunization that may or may not have been caused by the vaccine or the immunization process.’ (BCCDC, 2011)

When adverse events occur following immunization, they may not have been caused by the immunization or the vaccine components. Vaccinators need to consider concurrent illness and other potential causes when interpreting adverse reactions following immunization.

- Large numbers of influenza/pneumococcal doses are administered each year. It is expected there will be some temporal and merely coincidental association between adverse events and influenza/pneumococcal vaccine administration.
- Adverse reactions following immunization are generally mild. Severe events resulting in permanent sequelae are extremely rare. (See Section 11: Anaphylaxis)

ADVERSE EVENTS ASSOCIATED WITH IMMUNIZATION (BCCDC, 2011)

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>COMMON</th>
<th>COMFORT MEASURES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influenza Vaccine</td>
<td>• Local reactions – pain, swelling, and/or redness at the injection site</td>
<td>• Acetaminophen for local reactions and fever</td>
</tr>
<tr>
<td></td>
<td>• Fever</td>
<td>• Cool cloth on injection site</td>
</tr>
<tr>
<td></td>
<td>• Headache, malaise, myalgia</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• May last 1-2 days</td>
<td></td>
</tr>
<tr>
<td>Pneumococcal Polysaccharide Vaccine</td>
<td>• Local reactions - pain, swelling, and/or redness at the injection site</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Fever</td>
<td></td>
</tr>
</tbody>
</table>

(BC HealthLink Files: #12b: Facts about Influenza (the Flu), #62b: Pneumococcal Infection: Polysaccharide Vaccine)

The benefits of preventing disease far outweigh the risks of immunization. (BCCDC)

- Deferral of subsequent immunization because of incorrect or over cautious interpretation of an adverse event may leave an individual at greater risk from the natural disease than from continued immunization.
- An understanding of the basic mechanisms by which adverse events following immunizations occur will aid in the timely and accurate management of these adverse events.
**Adverse events** are reported when they are severe, unexpected or of concern and when they occur within the timeframe provided by the temporal criteria noted in the BCCDC Immunization Manual: [Section IX – Vaccine Associated Adverse Events](#). The purpose of this section is to assist Medical Health Officers and other health practitioners who administer vaccine with interpretation of adverse events and their implications for subsequent immunization.

The procedure for referring an adverse event to the MHO and reporting to BCCDC is as follows:

**Public Health Nursing:**
- Proceed with reporting the adverse event as per the NH DST: [Adverse Event Following Immunization](#) and NH Communicable Disease Memo: [Adverse Event Following Immunization](#).

**WH&S Staff Immunizers/NH Flu Champions:**
- Connect with your WH&S Influenza Immunization Clinic Nurse who will assist in filling out the [Report of Adverse Event (reaction) Following Immunization (HLTH 2319)](#) form and submitting it to Public Health.

Note: Adverse Events Following Immunization are voluntarily reportable in British Columbia to monitor vaccine safety. The [Report of Adverse Event (reaction) Following Immunization (HLTH 2319)](#) form is published by the Ministry of Health to facilitate reporting by health care providers to their local health unit. Criteria for reporting and management of adverse events are found in BCCDC Immunization Manual – [Section IX – Adverse Events Following Immunization](#). 

---

**Adverse Events – Key Resources:**
- **Public Health Nursing:**
  - BCCDC Immunization Manual: [Section IX – Adverse Events Following Immunization](#)
  - NH DST for Public Health Nursing: [Adverse Event Following Immunization](#)
  - NH Communicable Disease Memo: [Adverse Event Following Immunization](#)
- **WH&S Influenza Clinic Nurses/Peer Immunizers:**
  - BCCDC HLTH 2319 - [Report of Adverse Event (reaction) following immunization (Form)](#)
ANAPHYLAXIS

IMPORTANT NOTICE:

- The BCCDC Immunization Manual: Section V – Management of Anaphylaxis in a Non-Hospital Setting is the resource for guiding public health nursing practice (See NH Clinical Standard: Adoption of BCCDC Communicable Disease Control Guidelines)
- The NH Clinical Standard: Anaphylaxis is the resource for guiding all other NH immunization providers.

The following is not a substitute for the BCCDC Immunization Manual/NH Clinical Standard: Anaphylaxis.

Anaphylaxis is a potentially life-threatening reaction to a substance. While extremely rare, every immunization carries an associated risk of producing an anaphylactic reaction. The estimated annual reported rate of anaphylaxis ranges from 0.4 to 1.8 reports per 1,000,000 doses of vaccine distributed in Canada. (BCCDC)

The more rapidly anaphylaxis occurs after exposure to an offending stimulus, the more likely the reaction is to be severe and potentially life-threatening.

- Uniphasic-onset occurs in seconds to under an hour following allergen exposure and resolves within 4 hours with appropriate treatment.
- 20% of episodes follow a biphasic course with reoccurrence of the reaction after a 2-9 hour asymptomatic period; hospitalization or a long period of observation is recommended for monitoring. The second phasic reaction can be as pronounced as that of the initial episode. (BCCDC)

Anxiety, fainting and breath-holding are common reactions and must be distinguished from anaphylaxis. The lack of hives, a slow, steady pulse rate and cool pale skin distinguishes a vasovagal episode from anaphylaxis.
Anaphylaxis versus Fainting and Anxiety (BCCDC)

<table>
<thead>
<tr>
<th></th>
<th>ANAPHYLAXIS</th>
<th>FAINTING</th>
<th>ANXIETY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DEFINITION</strong></td>
<td>An acute systemic and potentially fatal allergic reaction to a foreign substance. IgE mediated antibody induces histamine release from mast cells.</td>
<td>A temporary unconsciousness caused by diminished blood supply to the brain due to painful stimuli or emotional reaction.</td>
<td>A protective physiological state recognized as fear, apprehension or worry.</td>
</tr>
<tr>
<td><strong>ONSET</strong></td>
<td>Usually slower, most instances begin within 30 minutes after immunization</td>
<td>Sudden, occurs before, during, or shortly after immunization, recovery occurs within 1-2 minutes</td>
<td>Sudden, occurs before, during, or shortly after immunization, recovery occurs within 1-2 minutes</td>
</tr>
<tr>
<td><strong>SKIN</strong></td>
<td>• Flushed, red blotchy areas (not necessarily itchy)</td>
<td>• Pale</td>
<td>• Pale</td>
</tr>
<tr>
<td></td>
<td>• Itchy, generalized hive-like rash</td>
<td>• Excessive perspiration</td>
<td>• Excessive perspiration</td>
</tr>
<tr>
<td></td>
<td>• Tingling sensation often first felt about face and mouth</td>
<td>• Cold, clammy</td>
<td>• Cold, clammy</td>
</tr>
<tr>
<td></td>
<td>• Progressive, painless swelling around face, mouth &amp; tongue</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>BREATHING</strong></td>
<td>• Sneezing, coughing, wheezing, labored breathing</td>
<td>• Normal or shallow, irregular, labored</td>
<td>• Rapid and shallow (Hyperventilation)</td>
</tr>
<tr>
<td><strong>PULSE</strong></td>
<td>• Rapid, weak</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>BLOOD</strong></td>
<td>• Decreased systolic and diastolic</td>
<td>• Decreased systolic and diastolic</td>
<td></td>
</tr>
<tr>
<td><strong>PRESSURE</strong></td>
<td>• Uneasiness, restlessness, agitation</td>
<td>• Fearfulness</td>
<td>• Fearfulness</td>
</tr>
<tr>
<td><strong>SYMPTOMS &amp;</strong></td>
<td>• Hypotension, which generally develops later and can progress to cause shock and collapse</td>
<td>• Light-headedness</td>
<td>• Light-headedness</td>
</tr>
<tr>
<td><strong>BEHAVIORS</strong></td>
<td>• Not all signs/symptoms will be exhibited in each person, usually one body system predominates</td>
<td>• Dizziness</td>
<td>• Dizziness</td>
</tr>
<tr>
<td></td>
<td>• Loss of consciousness</td>
<td>• Numbness, weakness</td>
<td>• Numbness, weakness</td>
</tr>
<tr>
<td><strong>GASTRO-</strong></td>
<td>• Nausea and vomiting</td>
<td>• Nausea</td>
<td></td>
</tr>
<tr>
<td><strong>INTESTINAL</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>OTHER</strong></td>
<td>• Loss of consciousness</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SYMPTOMS</strong></td>
<td>• Progression of injection site reaction beyond hives and swelling</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ANAKITS

Immunizers are to review the contents of their Anakit prior to commencement of the clinic:

- Ensure supplies are up to date and contents are adequate.
- Protect Epinephrine and Diphenhydramine hydrochloride from light. Open vials only when ready to use.
- Do not preload epinephrine as it rapidly deteriorates and loses potency when exposed to oxygen

BCCDC Suggested Anakit Contents:

- BCCDC guidelines for the management of anaphylaxis: Sections 2.3, 10.0 and 11.0
- 3-1cc syringes and needles (25 – 27 gauge, 1” needle)
- 1-1cc syringe and needle (25-27 gauge, 1 ½” needle)
- 2-3cc syringes and needles (25-27 gauge, 1” and 1 ½” needles)
- 2-1cc syringes and needles 925-27 gauge, 5/8”) for SC route
- Extra needles, alcohol swabs
- 4 ampules of epinephrine 1:1,000 (within expiration time frame)
- 2 vials of diphenhydramine hydrochloride 50mg/ml (within expiration time frame)
- Pens/Paper

Each PHN immunizer to have a blank anaphylaxis recording form available (BCCDC Immunization Program Manual: Section V - Management of Anaphylaxis in a Non-Hospital Setting pg. 13)
SUPERVISION - POST IMMUNIZATION

- See Post Vaccination – Client Information
- Routinely ensure all vaccine recipients remain either within a short distance of the vaccinator or a healthcare provider prepared to manage anaphylaxis.

TREATING ANAPHYLAXIS

Call 911 (or your local number for your ambulance)
Administer Epinephrine IM IMMEDIATELY

<table>
<thead>
<tr>
<th>Preferred Route</th>
<th>All ages</th>
<th>IM</th>
<th>Vastus Lateralis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternatives:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If both thighs were used:</td>
<td>≥ 12 months of age</td>
<td>IM</td>
<td>Deltoid</td>
</tr>
<tr>
<td></td>
<td>&lt; 12 months of age</td>
<td>SC</td>
<td>Upper outer triceps' area</td>
</tr>
<tr>
<td>If thigh or deltoid cannot be used:</td>
<td>≥ 12 months of age</td>
<td>SC</td>
<td>Fatty area of anterolateral thigh</td>
</tr>
<tr>
<td></td>
<td>&lt; 12 months of age</td>
<td>SC</td>
<td>Upper outer triceps area</td>
</tr>
</tbody>
</table>

- IM vastus lateralis – can be administered through clothing as necessary
- **DO NOT** inject into same muscle mass as vaccine
- Repeat at 5 min. intervals PRN
- Max. 3 doses
- Alternate Rt. & Lt thigh/arm sites as repeating and alternating sites maximizes absorption
- IM route absorbs faster

The most important step in the management of anaphylaxis is giving epinephrine

Side effects of excessive doses pose little danger but can add to the person’s distress by causing palpitations, tachycardia, flushing and headache. Cardiac dysrhythmias can occur in older adults but are rare in otherwise healthy children.

There is **NO CONTRAINDICATION** to epinephrine administration in anaphylaxis. **IMPORTANT**: failure to administer epinephrine immediately after the onset of anaphylactic symptoms has been shown to be an independent risk factor contributing to fatal outcomes.

**IF** a client or their parent/guardian refuses the administration of epinephrine when it is indicated:

- Inform of risk
- Immediately call 911
DIPHENHYDRAMINE HYDROCHLORIDE (BENADRYL)

Diphenhydramine Hydrochloride is to be used only as an adjunct if the client is not responding well to epinephrine OR to maintain symptom control when client cannot be transferred to acute care within 30 minutes.

Diphenhydramine Hydrochloride

- Is considered a second-line therapy and should NEVER be administered alone in the treatment of anaphylaxis in a non-hospital setting.
- Is administered (one dose) IM preferably at a different site to that in which epinephrine was given.
- Can be given into same muscle mass as the vaccine was given.
- Can be given at any time interval either after the initial or repeat doses of epinephrine as indicated by the client’s condition.

The client needs to be aware that when using an antihistamine (e.g., Benadryl) that it may mask the severity of a subsequent reaction which could result in delayed medical treatment.

ANAPHYLAXIS - DOCUMENTATION

Public Health Nursing:

- Proceed with reporting the adverse event as per the NH Clinical Standard: Adverse Event Following Immunization and NH Communicable Disease Memo: Adverse Event Following Immunization.
  - Complete the “Enhanced Surveillance and Worksheet for Events Managed as Anaphylaxis Following Immunization”. Discuss this with your HSDA Communicable Disease Program Manager /Coordinator.
- Utilize ‘Emergency Treatment of Anaphylaxis’ to guide the treatment of Anaphylaxis. (BCCDC Immunization Manual: Section V – Management of Anaphylaxis in a Non-Hospital Setting - Section 10.0 Emergency Treatment of Anaphylaxis)

WH&S Influenza Clinic Nurses/Peer Immunizers:

- Utilize NH DST: Anaphylaxis for the management of anaphylaxis
- Report all instances of anaphylaxis to public health utilizing the BCCDC online reporting form: Enhanced Surveillance and Worksheet for Events Managed as Anaphylaxis Following Immunization. This worksheet should be completed by the immunizing health care professional that observed and treated the client who experienced the anaphylactic episode. Management guidelines for these events are found in BC CDC Manual, Chapter II Immunization Program Section 5-Management of Anaphylaxis In a Non-Hospital Setting. After filling and printing the form, submit the form to the local health unit.
**FAINTING: PREVENTION**

Following immunization, fainting is the more common reason to keep clients under observation. Fainting is defined as a temporary unconsciousness caused by decreased blood supply to the brain due to painful stimuli or emotional reaction (BCCDC, 2012)

- With the small risk of anaphylaxis and the greater risk of fainting, client should wait for 15 minutes.
- Ask client about history of fainting with previous immunizations.
- It is important to be able to distinguish between anaphylaxis and fainting. The lack of urticaria, a slow, steady pulse rate and cool, pale skin distinguishes a vasovagal episode from anaphylaxis. Fainting is addressed in the Section 5 (Anaphylaxis) of the BCCDC Imms manual. The BCCDC *Anaphylaxis vs. Fainting and Anxiety* table that delineates the differences between anaphylaxis and fainting is very helpful.

- **If unconsciousness persists for more than 2-3 minutes, call 911 and proceed as per treatment for anaphylaxis.**

To reduce the likelihood of fainting (and the possibility of injuries), consider the following measures to lower stress in those awaiting immunization:

- Seat every client prior to immunization
- Maintain a comfortably cool room temperature and if possible, plenty of fresh air
- Avoid long line ups in mass immunization clinics
- Prepare biological product(s) out of view of recipients
- Provide privacy during immunization
- If client is anxious and pale, have them lie down with legs elevated
- Apply cold wet cloth to face.

### Anaphylaxis – Key Resources:

- BCCDC Immunization Manual:  *Section V – Management of Anaphylaxis in a Non-Hospital Setting*
- NH Clinical Standard(S):
  - Adverse Event Following Immunization
  - Anaphylaxis
- Enhanced Surveillance and Worksheet for Events Managed as Anaphylaxis Following Immunization.
COLD CHAIN/BIOLOGICAL MANAGEMENT

“Cold chain” refers to the process used to maintain optimal temperature conditions during the transport, storage and handling of vaccines, starting at the manufacturer and ending with the administration of the vaccine to the client. Vaccines are sensitive biological products; protection of vaccine potency and stability is important. The recommended temperature for vaccine storage is, at all times, +2 degrees Celsius to +8 degrees Celsius. (BCCDC)

All vaccine handlers and health care professionals responsible for immunization delivery must be aware of:

- The importance of the cold chain and the implications of cold chain incidents
- Standard vaccine storage and handling practices
- The immediate and appropriate action to be taken in the event of a vaccine exposure to temperatures outside the standard storage conditions. (BCCDC)

All immunizers should be aware of the principles of vaccine handling in the transportation and management of vaccines for clinics:

- Vaccines should be kept in the original packaging and kept in a cooler until ready to administer.
- Use small coolers at work stations to store a small amount of vaccine. Vaccine should be protected from freezing with a protective barrier of insulating material between the vaccines and the frozen packs which are placed at the top of the cooler.
- A thermometer should be placed in the small cooler when vaccine will be in the cooler for more than 4 hours.
  - Biologicals are not hazardous waste. However all glass multi-dose vials are to be placed in a sharps container for disposal.

The Biological Products Consultant for each HSDA will ensure that all public health nursing staff who handles vaccines is trained in biological management procedures.

Each health unit has a designated Biological Products Monitor who is responsible for the overall monitoring of vaccine. In the event of a cold chain incident, both public health nursing staff and other providers are to label and quarantine the vaccine in a fridge (+2 to +8 Celsius) and seek immediate guidance from the Biological Products Consultant for direction about the use of the vaccines.

Cold Chain – Key BCCDC Resources:

BC Immunization Manual: Section VI – Management of Biologicals

- Handle Vaccines with Care
- Mass Vaccine Handling Tips
- Temperature Form
- What to do if the temperature is outside the 2° - 8° range
- Packing an Insulated Cooler
- How to Store Vaccines in the Refrigerator
- Cold Chain Checklist
IMMUNIZATION STATION & SUPPLIES

- Each immunization station should have a separate table or be spaced well enough away from the next station for safety and privacy.
- Consider having nurses work back-to-back to allow sharing of supplies and facilitation of consultation between immunizers.
- Stations need at least 2 chairs.
- Organize supplies considering client safety, e.g., placement of needles and sharps container.

List of Immunization Station Supplies:

- Alcohol swabs or alcohol
- Band-Aids - advise parents re: choking hazard
- Disinfectant wipes
- Hand sanitizer, hand lotion
- Needles
  - 1” 25 gauge
  - 1 ½” 25 gauge
  - 7/8” 25 gauge
- Pen
- Small cooler packed with gel/icepacks and insulating materials
- Syringes (3cc & 1cc depending on dose to be administered)
- Anaphylaxis kit (1 per station)
- Cotton balls, 2x2 gauze, Q-tips (option)
- Gloves, readily accessible (latex free)
- Juice boxes
- Garbage bag
- Sharps containers (1 per PHN)
- Stickers or prizes (optional)
- Tissue
- Vaccine basket/bacon tray (for ID multiple vaccine agents)
- Tray covers/paper to cover tables
- “Influenza and Pneumococcal Vaccine Clinic Tally” Form
- Appropriate BC HealthLink files
- ‘What to do after your child’s immunizations’ (pamphlet)

Note: See Sample Clinic Supply List (# 10-405-7025)
SAFE HANDLING OF SHARPS

- Only open needles that are intended for immediate use
- Ensure the needle is secure to the hub of the syringe before use
- Do not recap needles. Engage safety shield after use
- Place used needles and vials directly into a sharps, puncture-resistant container
- The sharps container should be placed ergonomically within easy and direct reach of the immunization nurse. It should be placed where it cannot be tampered with by anyone e.g., such as off the floor and out of reach of young children.
- Fill container to ¾ mark only, seal & place in designated area within work setting
- Do not empty one sharps container into another

EMPLOYEE INJURY/INCIDENTS (E.G. NEEDLE STICK INJURIES)

- Seek first aid as per NH Clinical Standard: First Aid Services
  - Blood and body fluids exposure is a special type of unusual incident that is managed according to NH Clinical Standard: Blood & Body Fluid Exposure Management
- Report all incidents to the clinic coordinator, PH Program Manager and to the Workplace Health call Centre.
  - See NH Clinical Standard: Employee Incident Reporting and Investigation. All hazards, risk, near miss, or unsafe situations, which have the potential to cause an occupational injury or illness, or actual injuries or incidents to an NH employee, are to be reported through the Employee Incident Report line (1-866-922-9464) to Workplace Health & Safety.

Work Place Health & Safety – Key Resources:

- NH Workplace Health & Safety iPortal Site
- NH Precautionary Techniques, Routine and additional Transmission-Based Precautions and Infectious Diseases of Specific Concern: Section B – Routine Precautions (HCI-B030)
- BC Health File #97 - Contact with Blood or Body Fluids: Protecting Against Infection
- NH Clinical Standard: First Aid Services
- NH Clinical Standard: Blood & Body Fluid Exposure Management
- NH Clinical Standard: Employee Incident Reporting and Investigation.
SURVEILLANCE

NH Public Health Nursing reports data in relation to influenza vaccine uptake and influenza disease in the community to Northern Health and BCCDC.

Designated PHN Flu Coordinators in each office ensure an up-to-date *Influenza and Pneumococcal Vaccine Clinic Tally* form is available at the influenza clinics for the immunizing nurses. Following each clinic, nurses are to submit their completed tally forms to their office flu coordinators or designate who will enter the clinic total numbers to the Preventive Public Health Surveillance & Data Collection site.

Reporting the number of influenza vaccine doses administered to different target groups assists BCCDC when assessing immunization rate and in planning and evaluating targeted interventions for populations with less than optimal immunization rates.

In Northern Health, PHNs also participate in Influenza identification and testing in schools, in addition to reporting on cases of influenza identified in the general community. This data supports BCCDC in:

- Detecting flu outbreaks across the province
- Provide timely up-to-date information on flu activity in Canada and abroad to health professionals and interested Canadians.
- Provide information that the World Health Organization can use to make its recommendations on the best vaccine to use for seasonal flu shots. (PHAC, 2011)

See NH Clinical Standards:

- Surveillance: Reporting of Influenza Immunization Coverage in Facilities
- Surveillance: Recording of Positive Influenza Cases and Influenza-Like Illness in iPortal
- Surveillance: Influenza-Like Illness in Schools

**Surveillance – Key Resources:**

- Preventive Public Health Surveillance & Data Collection
  - Influenza and Pneumococcal Vaccine Clinic Tally form
  - Influenza Clinic and Physician Forms, Letters and Info (printable)
- BC Influenza Surveillance Bulletins (BCCDC – BC Influenza Surveillance Bulletins)
- Flu Watch (Canada - National Surveillance Weekly Reports)
VACCINE ORDERING PROCEDURES

RECEIPT OF PUBLICLY FUNDED INFLUENZA VACCINE FROM BCCDC TO NORTHERN HEALTH PUBLIC HEALTH NURSING:

BCCDC determines which influenza vaccines will be available as publicly funded vaccines for the upcoming influenza season. The BC Provincial CD Policy Committee, who has representatives from each health authority, then decides how the vaccine is to be distributed within the province between each of the health authorities.

Towards the end of a current influenza season, the NH CD program leads in each HSDA review the reported amounts of influenza vaccine administered and this assists in determining the projected requirements that are requested by BCCDC for the upcoming influenza season. These numbers are collated by the NH regional CD manager who in turn, provides the overall NH projection to BCCDC for the upcoming season.

In the fall, prior to the initiation of the next influenza season, BCCDC in collaboration with the health authorities determines the schedule of vaccine delivery to the designated vaccine drop sites (hubs) in each health authority. From these hubs, there is further distribution of vaccine to the local health units, who in turn, will redistribute to other community vaccine providers. The distribution within Northern Health is managed through the NH Communicable Disease Planning Team.

Inventory of influenza vaccine is monitored locally, regionally and provincially through Panorama. This enables an efficient system to monitor availability and potential redistribution if required. Influenza vaccine requirements are to be requested through the local office Biological Product Monitor responsible for vaccine ordering. The Biological Product Monitor in turn will consult with the area Biological Product Coordinator to determine if vaccine is available for redistribution within NH prior to ordering further vaccine from BCCDC.

RECEIPT OF PUBLICLY FUNDED INFLUENZA VACCINE FROM NH PUBLIC HEALTH NURSING TO ‘OTHER PROVIDERS’:

‘Other Providers’ who are eligible to order publicly funded influenza vaccine do so through their local health unit.

- Distribution to NH WH&S peer immunizers and/or flu clinic nurses, pharmacists and other community vaccine providers is as per NH protocol and inventory pathways. (See: NH PH Biological Management iPortal site)
- Questions can be directed through the Biological Product Monitor at each health unit.
- Immunization Resources and Tools are available to Community Vaccine Providers on the NH external website.

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Surveillance – Key Resources:

- NH PH Biological Management iPortal site
- NH external website for NH Community Vaccine Providers:– Immunization Resources & Tools
WORKPLACE HEALTH & SAFETY

The Workplace Health and Safety (WH&S) team is responsible for ensuring staff and health care workers working in Northern Health Authority have reasonable and timely annual access to Influenza immunization and information.

The WH&S team is composed of an Influenza Program Coordinator, Regional Influenza Program Nurses, Influenza Immunization Clinic Nurses and Peer Immunizers.

The Influenza Immunization Program Coordinator for 2014-2015 is Toni Harfield RN, BSN. Toni is an Occupational Health Nurse with WH&S for Northern and Interior Health.

Contact information: 1626 Richter Street, Kelowna BC VV1Y 2M3
Office 250-870-5760
Email: toni.harfield@interiorhealth.ca

Roles and Responsibilities:
- Oversees WH&S Employee Influenza Immunization Program
- Sits on Program Implementation and Steering Committees
- Maintains master clinic schedule and immunizer lists
- Develops and assists in the delivery of immunizer education and competency requirements

Influenza Program Nurses are located in Northern Interior, with a dual role for Norwest and Northeast.

Roles and Responsibilities:
- Reports to Program Coordinator
- Attends a full session of Flu School and ensures immunization competencies are met and up to date by completing and submitting the Skills Competencies Checklist prior to delivering and influenza immunizations
- Maintains a list of Influenza Immunization Clinic Nurses and Peer Immunizers and ensures they have access to adequate training
- Orders supplies for Influenza Immunization Clinic Nurses and Peer Immunizers
- Assembles and sends Peer Immunizer kits
- Schedules flu clinics in coordination with Influenza Immunization Clinic Nurses based on the number of employees at each facility
- May function as a Influenza Immunization Clinic Nurse if time permits
- Compiles appropriate reports for submission to Program Coordinator
- Attends regular teleconferences with Program Coordinator and others as required
• Disseminates program information and encourages influenza immunization uptake amongst health care workers
• Coordinates with Public Health Nursing and NHA pharmacies as needed to manage influenza vaccine
• Directs Influenza Immunization Nurses and Peer Immunizers on how to obtain vaccine

**WH&S Influenza Immunization Clinic Nurses** provide scheduled clinics for influenza immunization for employees and health care workers working within Northern Health Authority.

Roles and responsibilities:
• Reports to Regional Influenza Program Nurse
• Attends a full session of Flu School and ensures immunization competencies are met and up to date by completing and submitting the *Skills Competencies Checklist* prior to delivering and influenza immunizations
• Positively promotes the NHA Health Care Worker (HCW) Influenza Control Program and provides current influenza information and education to peers and HCWs
• Posts schedules for influenza immunization clinics in NHA facilities
• Completes required documentation
  o Influenza Immunization Record (IIR)- Yellow copy given to HCW, white copy sent WH&S at completion of each clinic.
  o Directs employee to self-report their immunization at [flu.northernhealth.ca](http://flu.northernhealth.ca)
  o Completes Influenza Clinic Report and faxes it to Influenza Program Nurse at the completion of each clinic.
• Reports adverse events to the Influenza Immunization Program Coordinator in a timely manner
  o Completes HLTH 2319 and submits to the MHO for review.

**WH&S Peer Immunizers** are responsible for providing occasion flu immunizations to fellow coworkers who have difficulty attending a formal influenza immunization clinic. They may also be the only influenza immunizer at some smaller NHA facilities.

Roles and Responsibilities:
• Reports to Regional Team Lead
• Attends a full session of Flu School and ensures immunization competencies are met and up to date by completing and submitting the *Skills Competencies Checklist* prior to delivering any influenza immunizations
• Completes Appropriate Documentation
  o Influenza Immunization Record (IIR) - yellow copy given to HCW, white copy sent
to WH&S.

- Completes Vaccine Tally Sheet and faxes to the Flu Program Nurse every Monday (unless no immunizations were given that week)

**Workplace Health & Safety – Key Resources:**

- NH Clinical Standard: [Influenza Control Program 2014-2015](#)
- NH Clinical Standard: [Influenza Exclusion Criteria (Suspected and/or Confirmed)](#)
PARTING WORDS

Mass clinics can be overwhelming… line ups are long and it is hard not to feel compelled to rush. Make sure you SLOW DOWN, take care of yourself and in turn minimize the risk of vaccine errors.

Take the opportunity to get up and stretch on occasion and make sure you don’t skip your breaks.

Well in advance of providing influenza/pneumococcal vaccine identify your resources and know your material. Connect with your program manager and determine if you are ready to proceed with independent practice.
APPENDICES

APPENDIX 1: CHECKLIST FOR OBTAINING INFORMED CONSENT FOR A VACCINE

☐ Determine authority to provide informed consent

☐ Assess Capability to give informed consent (i.e., assess if capable of understanding the discussion (e.g., hearing, language, cognition))

☐ Provide Standard Information:
  1. Confirm the voluntary nature of immunization
  2. Advise that consent is obtained for a vaccine series and is valid until completion of the series or consent is revoked
  3. Provide the vaccine information as outline in BC Health Files:
     - Benefits of vaccination (personal, community)
     - Risk of not getting vaccinated (possibility of getting the disease)
     - Eligibility for the vaccines(s)
     - Common and expected adverse events
     - Possible serious or severe adverse events and their frequency
     - Contraindications
     - Disease(s) being prevented

☐ Confirm understanding of Standard Information (i.e., use clinical judgment to confirm that the person providing consent understands the Standard Information)

☐ Provide opportunity for questions (i.e., Ask if there are any questions).

☐ Confirm consent (i.e., ask the person providing consent if they are ready to proceed).

☐ Document consent or refusal

(BCCDC- Immunization Program, Section 1B – Informed Consent, 2010)
## APPENDIX 2: RELATIVE RISKS OF INFLUENZA AND PNEUMOCOCCAL DISEASES AND IMMUNIZATION

<table>
<thead>
<tr>
<th>INFLUENZA</th>
<th>RISKS ASSOCIATED WITH DISEASE</th>
<th>ADVERSE EVENTS ASSOCIATED WITH IMMUNIZATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Viral and bacterial pneumonia</td>
<td>• Local reactions (soreness at injection site): ≤ 7% of children &gt; 3 years of age, redness and swelling for 1-2 days</td>
</tr>
<tr>
<td></td>
<td>• Death reported in 0.5-1 per 1000 cases; most deaths in persons ≥ 65 years of age</td>
<td>• Fever: ≤12% of children 1-5 years of age</td>
</tr>
<tr>
<td></td>
<td>• During epidemics, there may be increased mortality and morbidity among the elderly, the immunocompromised and those with chronic disease</td>
<td>• Headache, malaise, myalgia: &lt; 1%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Risk of GBS estimated to be 1 excess case per million doses of influenza vaccine</td>
</tr>
</tbody>
</table>

| PNEUMOCOCCAL DISEASE       | • Pneumococcal pneumonia is an important cause of death in infants and the elderly.           | POLYSACCHARIDE VACCINE                                                                                     |
|                            | • Case fatality rate is 5-7% overall (much higher among the elderly)                           | • Local reactions (pain, swelling, or redness at injection site): 30-50-%                                  |
|                            | • Most common cause of bacterial meningitis. Case fatality rate is 30% (up to 80% among the elderly) | • Fever: 2%                                                                                                |
|                            | • Bacteremia: case fatality rate is 20% (up to 60% among the elderly)                         | • Irritability, drowsiness, restless sleep, decreased appetite, headache, malaise may occur with conjugate or polysaccharide vaccine |
|                            | • Otitis media                                                                                |                                                                                                           |

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Seasonal Influenza Vaccine Screening Questions

**INACTIVATED Vaccine 2014 - 2015**

Do you have any anaphylactic/serious allergies?

- **NO**
  - Yes: To a previous dose of any type of influenza vaccine
  - To any components in vaccine including but not limited to:
    - Formaldehyde
    - Thimerosal (eye solution preservative)

  Exception: Severe allergy to eggs following egg ingestion

- **DO NOT VACCINATE**

Do you have a history of Guillain-Barre syndrome?

- **NO**
  - **NO**
  - Within 8 weeks of receipt of a previous dose of influenza vaccine without another cause having been identified

- **DO NOT VACCINATE**

- **YES**

Are you less than 6 months of age?

- **NO**
  - **VACCINATE**

- **YES**
  - **DO NOT VACCINATE**

**Inactivated Seasonal Trivalent Influenza Products Being Used:**

- Fluid: For those 65 years and older
- Fluviral: For those 6 months and older
- Agriflu: For individuals with a known hypersensitivity to thimerosal & for those 6 months and older

**Children < 9 years of age:**

- Previously unimmunized children under 9 years of age require 2 doses of influenza vaccine given 4 weeks apart.
- The second dose is not required if the child has ever received one or more doses of influenza vaccine in a previous year.

Note: This is a screening tool for inactivated influenza vaccine only. For FluMist® see the [Live Attenuated Influenza Vaccine Screening Questions](#).

Reference: BCCDC Immunization Manual, Section VII-Biological Products, pg. 31 - 32c

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Pneumococcal Polysaccharide Vaccine Screening Questions
2014 – 2015

Have you ever had a Pneumococcal Polysaccharide Vaccine?

**NO**
Record review prior to immunizing:
- Check hard copy pneumococcal list
- Check electronic information system(s) (if available)
- Ask if they have a record of previous vaccinations e.g. a blue vaccination card?

**YES**

Is the client:
- eligible for an initial dose
- eligible and due for the once only revaccination?

**NO** → Do not vaccinate

**YES**

Does the client have a history of an anaphylactic reaction to a previous dose of the vaccine or any component of the vaccine?

**YES** → Do not vaccinate

**NO**

Is there a precaution related Hodgkin’s Disease?

**YES**

Review individual circumstances in determining whether to proceed with immunization.

**NO**

Vaccinate

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