Manitoba Health Seasonal Influenza and Pneumococcal Polysaccharide

Vaccine Administration Training Module 2023-2024

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2. Influenza Vaccine
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8. Storage and Handling of Vaccines
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10. Vaccine Administration
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1. Influenza Illness

- Disease description
- Transmission
- Risk Factors

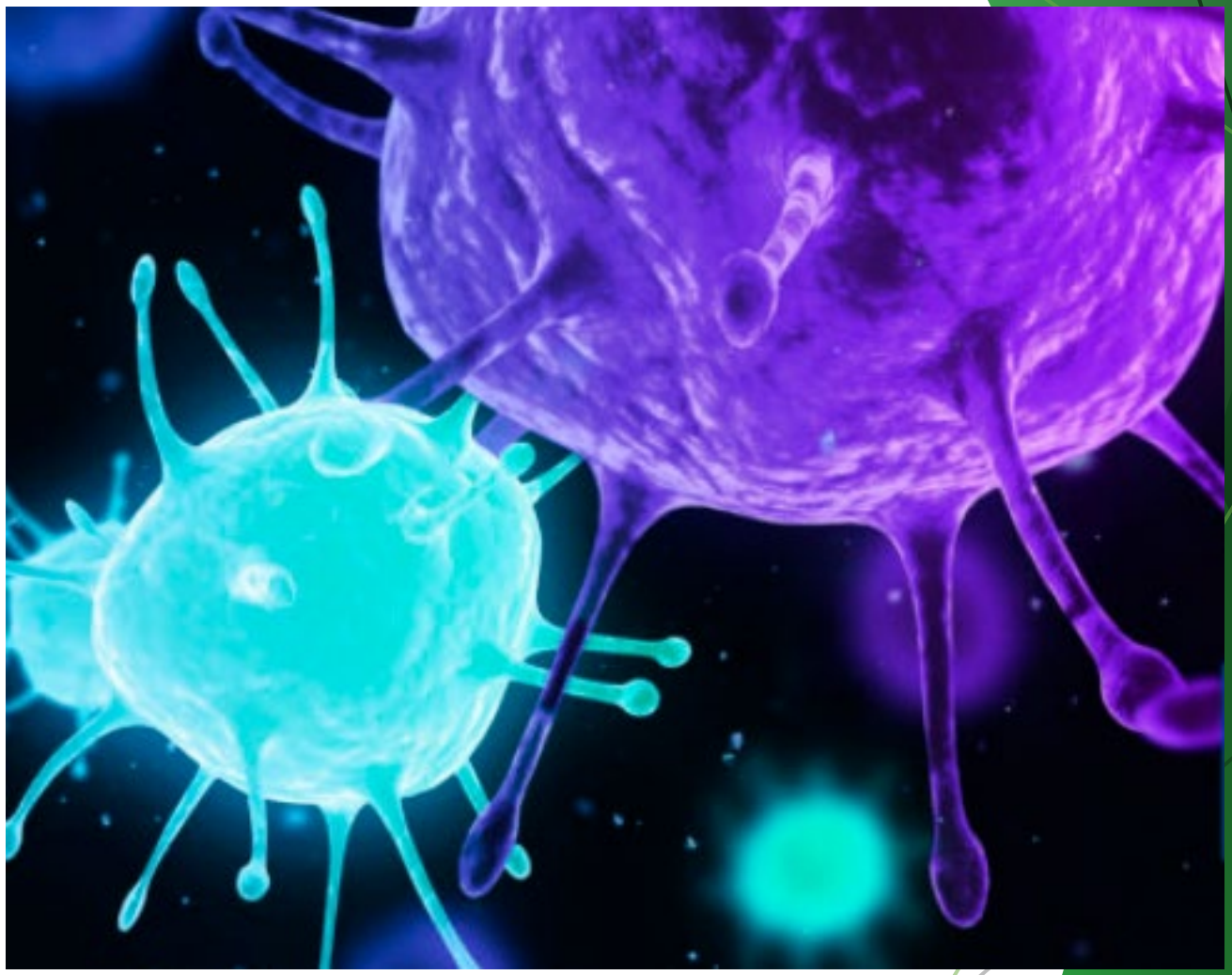

Image: CERTEST BIOTEC

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Influenza Disease Description

- Influenza (the flu) is a respiratory illness caused primarily by influenza A and B viruses.
- While most people recover within 7 to 10 days, severe illness can occur.
- Certain populations, such as young children, older adults, and those with chronic health conditions, are at higher risk for serious influenza complications such as viral pneumonia, secondary bacterial pneumonia, and worsening of underlying medical conditions.
- Every year, individuals with influenza and influenza-related complications increase the demand on the healthcare system in the fall and winter months.

- Symptoms typically include the sudden appearance of:
  - Fever
  - Cough
  - Muscle aches and pain
- Other common symptoms may include:
  - Headache
  - Chills
  - Fatigue
  - Loss of appetite
  - Sore throat
- Some people (especially children) may experience:
  - Diarrhea
  - Nausea and vomiting

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Influenza Transmission

- Influenza is primarily transmitted by aerosols and droplets spread through coughing or sneezing, and through direct or indirect contact with respiratory secretions (e.g. sharing food/drinks or touching objects contaminated with the virus and then touching your mouth, eyes or nose).
- The incubation period of seasonal influenza is usually about 2 days but can range from 1 to 4 days.
- Adults may be able to spread influenza to others from 1 day before symptom onset to approximately 5 days after symptoms start.
- Children and people with weakened immune systems may be infectious longer.

- To reduce risk, all Manitobans are encouraged to:
  - Stay home if they have any symptoms, even if they are mild.
  - Get the influenza vaccine.
  - Cover nose and mouth with forearm when coughing or sneezing.
  - Wash hands frequently with soap and warm water for at least 15 to 20 seconds (or use an alcohol-based hand sanitizer if soap and water are unavailable). This is especially important after coughing and sneezing, when caring for a sick person, after using the toilet and before/after eating.

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Risk Factors

Those at greatest risk of influenza-related complications:

- Adults and children with chronic health conditions
- Residents of nursing homes and other chronic care facilities
- Adults 65 years of age and older
- Children 0 to 59 months of age
- Pregnant individuals
- Indigenous individuals

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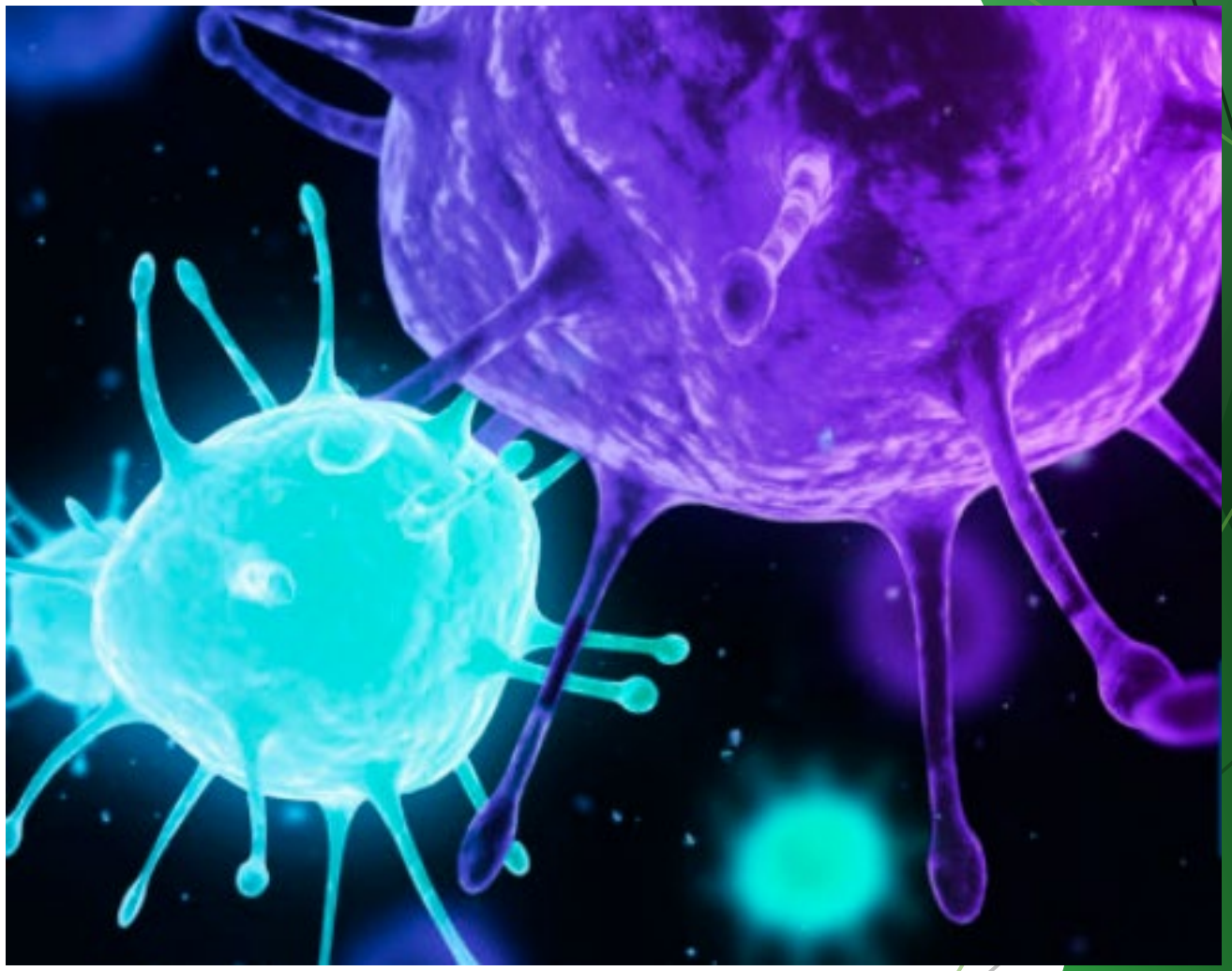
2. Influenza Vaccine

- Fluzone® Quadrivalent
- FluLaval® Tetra
- Afluria® Tetra
- Fluzone® High-Dose



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Influenza Vaccine

- Each year the World Health Organization (WHO) monitors the global spread of influenza and identifies which strains will likely cause the most illness during influenza season. Those strains are then used to create the influenza vaccine for that upcoming influenza season.
- Because the strains can change every year, the vaccine can be different each year. For this reason, and because the protection provided by the vaccine decreases overtime, it is important to get the influenza vaccine every fall.
- All standard-dose, egg-based inactivated influenza vaccines authorized and available in Canada for the 2023–24 season are expected to be quadrivalent and will contain the following strains:
  - A/Victoria/4897/2022 (H1N1)pdm09-like virus
  - A/Darwin/9/2021 (H3N2)-like virus
  - B/Austria/1359417/2021 (B/Victoria lineage)-like virus
  - B/Phuket/3073/2013 (B/Yamagata lineage)-like virus

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Influenza Vaccine

Is the influenza vaccine effective?

- The influenza vaccine has been shown to be effective against laboratory-confirmed cases of influenza.
- Immunization has been shown to reduce the number of physician visits, hospitalizations and deaths among those at highest risk of influenza and its complications.
- Influenza vaccine effectiveness depends on how well the vaccine strains match with circulating influenza viruses, the type and subtype of the circulating virus, as well as the health and age of the individual receiving the vaccine.
- Getting the influenza vaccine is the best defense against fighting influenza, and should one happen to become ill with influenza, being vaccinated will help lessen the severity of symptoms.

When should people get immunized against influenza?

- The influenza season usually begins in the fall and lasts into the spring.
- Protective levels of humoral antibodies, which correlate with protection against influenza infection, are generally achieved by 2 weeks after vaccination; however, there may be some protection afforded before that time. For this reason, it is better for individuals to be immunized early in the flu season.

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Influenza Vaccine

- The influenza vaccine cannot offer protection against other viral or bacterial infections, including illness like the common cold, stomach flu, or other respiratory illnesses such as COVID-19.
- However, getting the flu vaccine may reduce the number of people getting sick and requiring medical treatment in hospitals in the fall and winter months.
- This is when respiratory illnesses generally peak in Canada and put extra pressure on the health care system.

Seasonal Influenza Vaccine Fact Sheet

www.gov.mb.ca/health/publichealth/factsheets/flu_vaccine.pdf

Beyond protection against influenza and its severe outcomes, recent scientific research suggests that the influenza vaccine can also lower the risk for cardiovascular events especially among those who are at high risk for these events.

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High-Dose Influenza Vaccine

- As adults get older, their immune systems are less able to mount a response to vaccines.
- The high-dose flu vaccine contains four times the amount of influenza virus proteins (or antigens) which can boost immune response in older adults against flu. This can provide a higher level of protection against severe flu and its complications.
- The high-dose flu vaccine is the recommended vaccine product for Manitobans 65 years and older to receive every year.
- Since the high-dose flu vaccine contains more flu virus proteins than the standard-dose flu vaccine, it may cause more soreness, redness, or swelling at the injection site.

High-Dose Seasonal Influenza Vaccine for Seniors 65 Years and Older Fact Sheet:

www.gov.mb.ca/health/publichealth/factsheets/flu_highdose.pdf

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Vaccine	Supplied	Dosage/Route	Schedule
Fluzone® Quadrivalent Sanofi Pasteur **Licensed use: Age 6 months and older**	• 0.5 mL single dose prefilled syringe • 5.0 mL multidose vial (10 doses) Once punctured, multidose vial can be used to the expiry date listed on the vial. Multidose vial can be used for a MAXIMUM of 10 doses. Prefilled syringes: Shake well to uniformly distribute the suspension before withdrawing/administering each dose. After shaking, vaccine is clear to slightly opalescent colour.	0. 5mL Intramuscular (IM) injection into the deltoid muscle is the preferred injection site for adults and children greater than 1 year of age. Intramuscular (IM) injection into the vastus lateralis muscle (anterolateral aspect of the mid thigh) for children less than 1 year of age.	**6 months to 8 years of age** ➢ 1 or 2 doses* *Children 6 months to less than 9 years of age who have **NOT previously** been vaccinated against influenza should receive a second dose of 0.5 mL after an interval of at least 4 weeks. **9 years and older** ➢ 1 dose
FluLaval® Tetra GlaxoSmithKline Inc. **Licensed use: Age 6 months and older**	• 5.0 mL multidose vial (10 doses) Once punctured, the multi-dose vial must be discarded after 28 days. Be sure to label the vial with date at first puncture if entire vial will not be used in one clinic. Shake prior to each administration. Vaccine is opalescent translucent to off-white suspension that may sediment slightly.		
Afluria® Tetra Seqirus **Licensed Use: Age 5 years and older**	• O.5 mL single dose prefilled syringe • 5.0 mL multidose vial (10 doses) Once punctured, the multidose vial must be discarded after 28 days. The number of needle punctures must not exceed 10 per multidose vial. Vials and prefilled syringes: Shake thoroughly to uniformly distribute the sediment immediately before use and before withdrawing each dose. Vaccine is a slightly opaque liquid with some white particulate sediment that resuspends upon shaking to form a homogenous suspension.	0. 5mL Intramuscular (IM) injection into the deltoid muscle is the preferred injection site for adults and children 5 years and older.	**5 years to 8 years of age** ➢ 1 or 2 doses* *Children 5 years to less than 9 years of age who have **NOT previously** been vaccinated against influenza should receive a second dose of 0.5 mL after an interval of at least 4 weeks. **9 years and older** ➢ 1 dose
Fluzone® High-Dose Sanofi Pasteur **Licensed Use: Adults 65 years and older**	• 0.7 mL single dose prefilled syringe Use until expiry date listed on vaccine. Shake well prior to administration. After shaking, vaccine is clear and slightly opalescent in colour.	0.7 mL Intramuscular (IM) injection into the deltoid muscle is the preferred injection site for adults 65 years and older.	**65 years of age and older** ➢ 1 dose

Influenza Vaccine Products

Manitoba Health will offer the following flu vaccine products for the 2023-2024 flu season:

Seasonal Influenza Immunization Quick Reference Guide (gov.mb.ca)

Please click on the product name below to access and review the product monographs:

1. FLUZONE® High-Dose Quadrivalent | Product Monograph (gov.mb.ca)
2. FLUZONE® Quadrivalent (gov.mb.ca)
3. FluLaval Tetra | Product Monograph (gov.mb.ca)
4. AFLURIA® TETRA | Product Monograph Template - Standard (gov.mb.ca)

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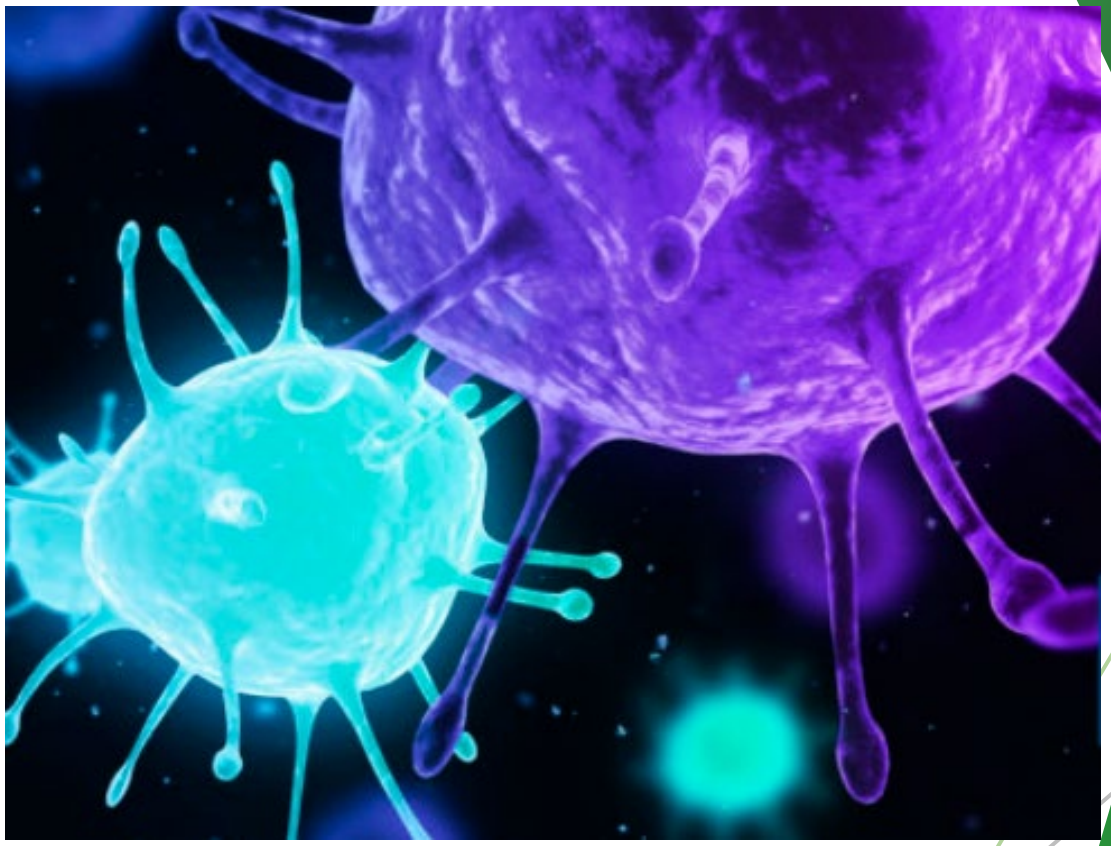
3. Influenza Vaccine Eligibility Requirements and Contraindications

- Eligibility & Recommendations for use
- Schedule
- Contraindications
- Precautions



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Eligibility Criteria and Recommendations for Use

Seasonal influenza vaccine is available free-of-charge to ALL Manitobans age 6 months and older.

It is especially important for individuals at increased risk of serious illness from influenza (and their caregivers and close contacts) to receive the vaccine including:

- People 65 years of age and older
- Residents of personal care homes or long-term care facilities
- Children 6 months of age to 59 months of age
- Pregnant individuals
- Health care workers and first responders
- Those who provide services within closed or relatively closed settings to people at high risk (e.g., Crew on ship)
- Regular caregivers of children up to 5 years of age
- Household contacts of anyone at increased risk of serious illness from influenza including those with infants under six months of age and/or expecting a newborn
- Indigenous peoples
- People who provide essential community services
- People who are in direct contact with poultry infected with avian influenza during culling operations.
- Individuals with the following health conditions:
  - An immune system weakened by disease or medical treatment (e.g. cancer)
  - Cardiac or pulmonary disorders (e.g. asthma or cystic fibrosis)
  - Long-term acetylsalicylic acid (Aspirin) therapy (for those between 6 months and 18 years of age *only*)
  - Neurologic or neurodevelopmental conditions including neuromuscular, neurovascular, neurodegenerative and seizure disorders (and for children, including febrile seizures and isolated developmental delay), but excluding migraines and psychiatric conditions without neurological conditions
  - Diabetes and other metabolic diseases
  - Renal disease
  - Anemia or hemoglobinopathy
  - Obesity (body mass index ≥ 40)

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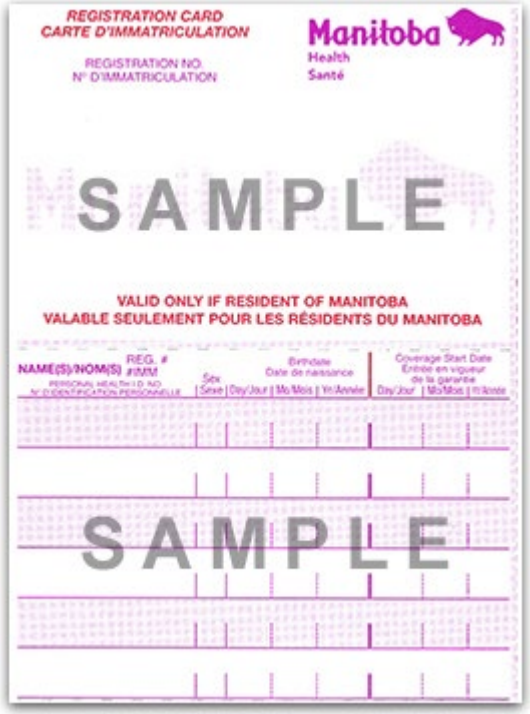
Eligibility Criteria and Recommendations for Use

International students and out-of-province visitors continue to be eligible to receive the influenza vaccine free-of-charge regardless of third-party insurance and/or Manitoba Health coverage (an administration fee may be charged).



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Schedule

NACI recommends that:

- Adults and children 9 years of age and older should receive 1 dose of influenza vaccine each year.
- Children 6 months to less than 9 years of age who have never received the seasonal influenza vaccine in a previous influenza season should be given 2 doses of influenza vaccine in the current season, with a minimum interval of 4 weeks between doses.
- Children 6 months to less than 9 years of age who have been vaccinated with one or more doses of seasonal influenza vaccine in any previous season should receive 1 dose of influenza vaccine per season thereafter.

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Contraindications

- Individuals under 6 months of age
- Severe allergic reaction (anaphylaxis) to a previous flu vaccine or to any of the components of an influenza vaccine, with the exception of eggs; *see next slide*
    - (If an individual is found to have an anaphylactic reaction to a component in one influenza vaccine, consideration may be given to offering another influenza vaccine that does not contain the implicated component, in consultation with an allergy specialist. Individuals who have an allergy to substances that are not components of the influenza vaccine are not at increased risk of allergy to influenza vaccine).
- People who have developed Guillain-Barré Syndrome (GBS) within 6 weeks of a previous influenza vaccination, unless another cause was found for the GBS
    - (The potential risk for a recurrent episode of GBS associated with influenza vaccination must be balanced against the risk of GBS associated with influenza infection itself and the benefits of influenza vaccination).

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Precautions

- **Acute illness:** Influenza vaccination should usually be postponed in people with serious acute illnesses until their symptoms have abated; influenza vaccination should not be delayed because of minor or moderate acute illness, with or without fever. (see *Seasonal Influenza Vaccine in the Presence of COVID-19* slide)

- **Oculo-respiratory syndrome (ORS): ORS** was identified during the 2000/01 flu season. Since then, there have been far fewer cases reported per year to the Canadian Adverse Events Following Immunization Surveillance System. ORS is not considered to be an allergic response. Persons who have a recurrence of ORS, including those with a severe presentation (bilateral red eyes, cough, sore throat, hoarseness, facial swelling) upon revaccination do not necessarily experience further episodes with future vaccinations. Individuals who have experienced ORS without lower respiratory tract symptoms may be safely re-immunized with influenza vaccine. Individuals who have experienced ORS with lower respiratory tract symptoms should seek medical advice.

- **Egg allergy:** is not a contraindication for influenza vaccination, as there is a low risk of adverse events (AEs) associated with the trace amounts of ovalbumin allowed in some influenza vaccines manufactured using eggs. Egg-allergic individuals may be vaccinated against influenza using any age-appropriate product, including Live Attenuated Influenza Vaccine (LAIV), without prior influenza vaccine skin test and with the full dose, irrespective of a past severe reaction to egg, and in any setting where vaccines are routinely administered. Cell culture-based (IIV4-cc) and recombinant (RIV4) vaccines are egg-free (ovalbumin-free).

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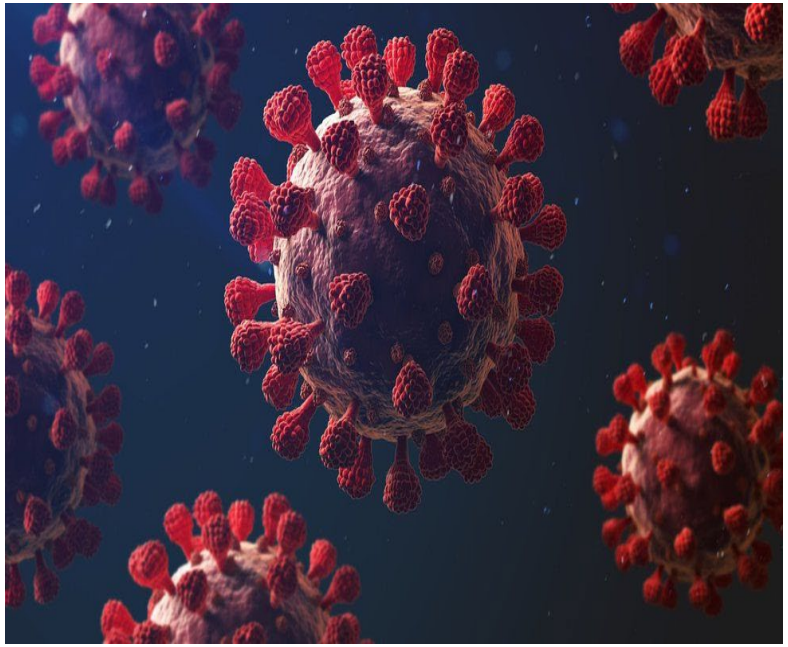
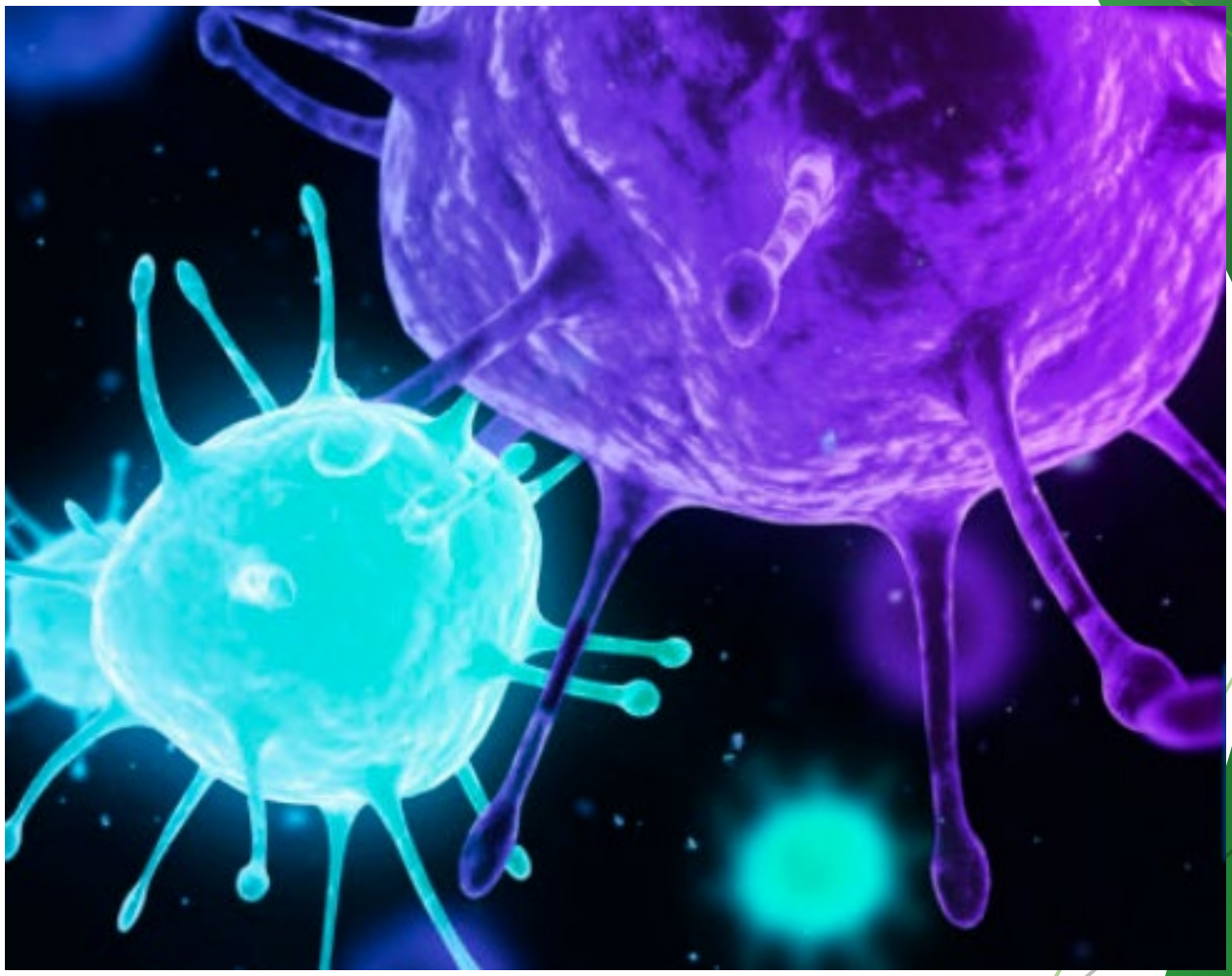
4. Guidance on the use of seasonal influenza vaccine in the presence of COVID-19





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Seasonal influenza vaccine in the presence COVID-19

It's important to minimize the morbidity and mortality related to potential influenza and COVID-19 co-circulation and to reduce the burden on the health care system to enhance the capacity to respond to ongoing COVID-19 activity.

Guidance on concurrent administration of influenza and COVID-19 vaccines:

- NACI guidance outlines that administration of COVID-19 vaccines may occur at the same time as, or at any time before or after influenza immunization (including all parenteral or intranasal seasonal influenza vaccines) for those aged 6 months of age and older.
- **For individuals experiencing symptomatic COVID-19 or asymptomatic SARS-CoV-2 infection or symptoms of acute respiratory illness in the outpatient setting,** vaccination should be deferred until the resolution of acute illness given the optimal timing of influenza vaccination for individuals with COVID-19 is still unknown and given the possibility of unknowingly transmitting COVID-19 or other respiratory infections to others, including healthcare providers. A symptomatic patient who presents to an outpatient setting may be vaccinated at the discretion of the clinic.

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5. Pneumococcal Disease

- Disease description
- Transmission
- Risk Factors

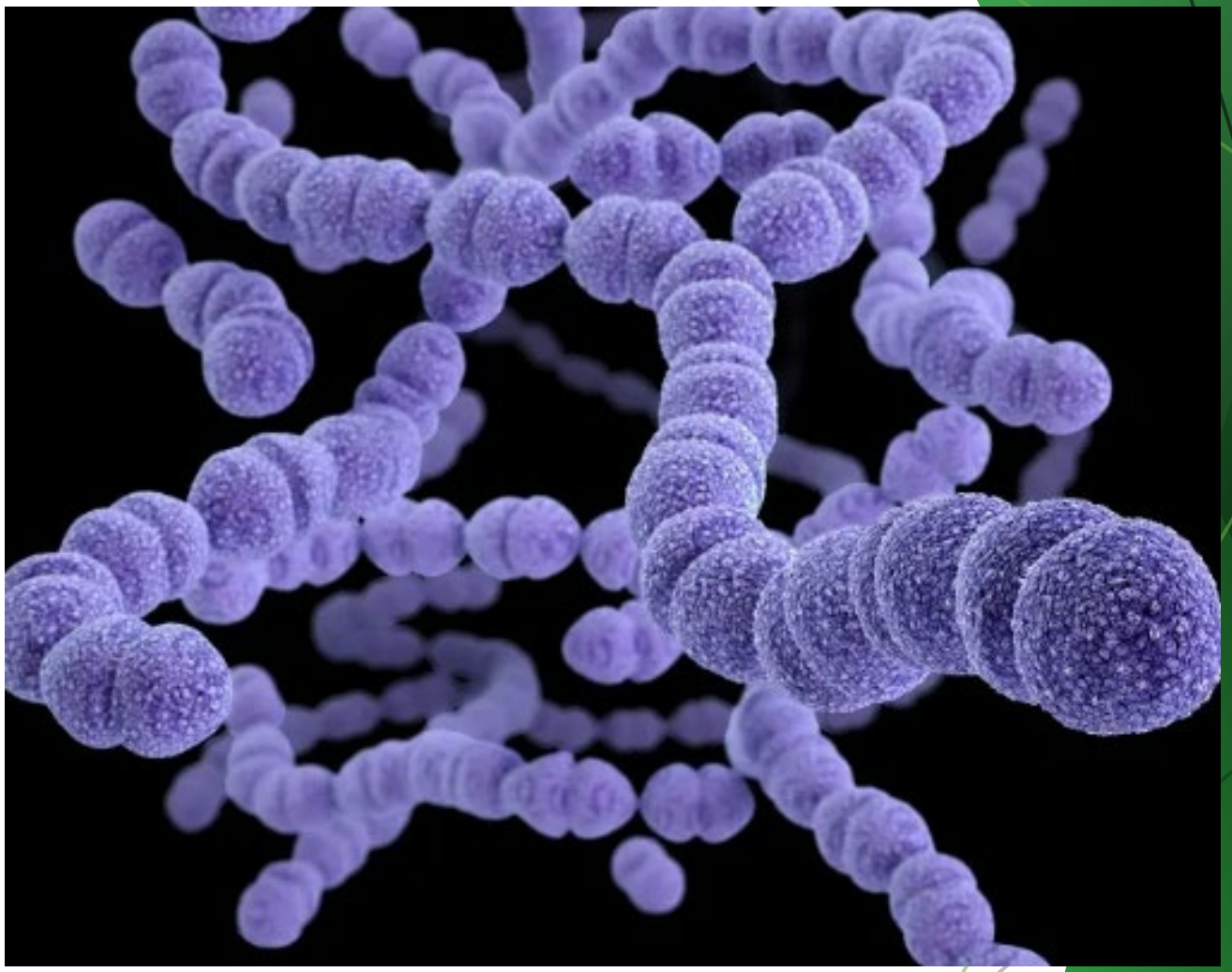

Image: National Foundation for Infectious Diseases

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Pneumococcal Disease

- Pneumococcal infection is a very serious illness that is caused by a germ (or bacteria) and is most common in the very young and very old as well as among people living with chronic medical conditions or lifestyle conditions that increase their risk.
- A pneumococcal infection can cause ear and sinus infections and community-acquired pneumonia (CAP).
- It can also cause more serious infections of the blood (septicemia) or brain (meningitis) referred to as invasive pneumococcal disease (IPD).
- Those who survive meningitis and septicemia may suffer from permanent brain damage and hearing loss.
- The case fatality rate of bacteremic pneumococcal pneumonia is 5% to 7% and is higher among elderly persons.

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Pneumococcal Disease

- Healthy people may carry *Streptococcus pneumoniae* in the nasopharyngeal regions without any presence of infection however they can still spread it to others, especially if they cough or sneeze.
- *Streptococcus pneumoniae* is an important cause of bacterial co-infection in individuals with influenza.
- Immunization is the best way to protect against pneumococcal infection.

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Transmission

- *Sreptococcus pneumoniae* is transmitted by direct oral contact, respiratory droplets or indirect contact with respiratory secretions of infected or colonized persons.
- A person can transmit the infection when nasal and throat secretions contain pneumococci in large numbers, usually until 24 hours following appropriate antibiotic treatment.
- The incubation period has not been clearly defined and may be as short as 1 to 3 days.
- It's important to cover your nose and mouth with your forearm when you cough or sneeze and wash your hands often with soap and water (or hand sanitizer if soap and water are unavailable), especially after coughing and sneezing.

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Risk Factors

- IPD is most common in the very young, the elderly, and groups at high risk due to an underlying medical condition.
- Attendance at a child care center has been shown to increase the risk of IPD and acute otitis media (AOM) 2-fold to 3-fold among children under 5 years of age.
- Susceptibility to *S. pneumoniae* infection and IPD is increased in smokers, persons with alcoholism and illicit drug users.
- Homeless populations have high rates of respiratory infections, including those caused by *S. pneumoniae.*

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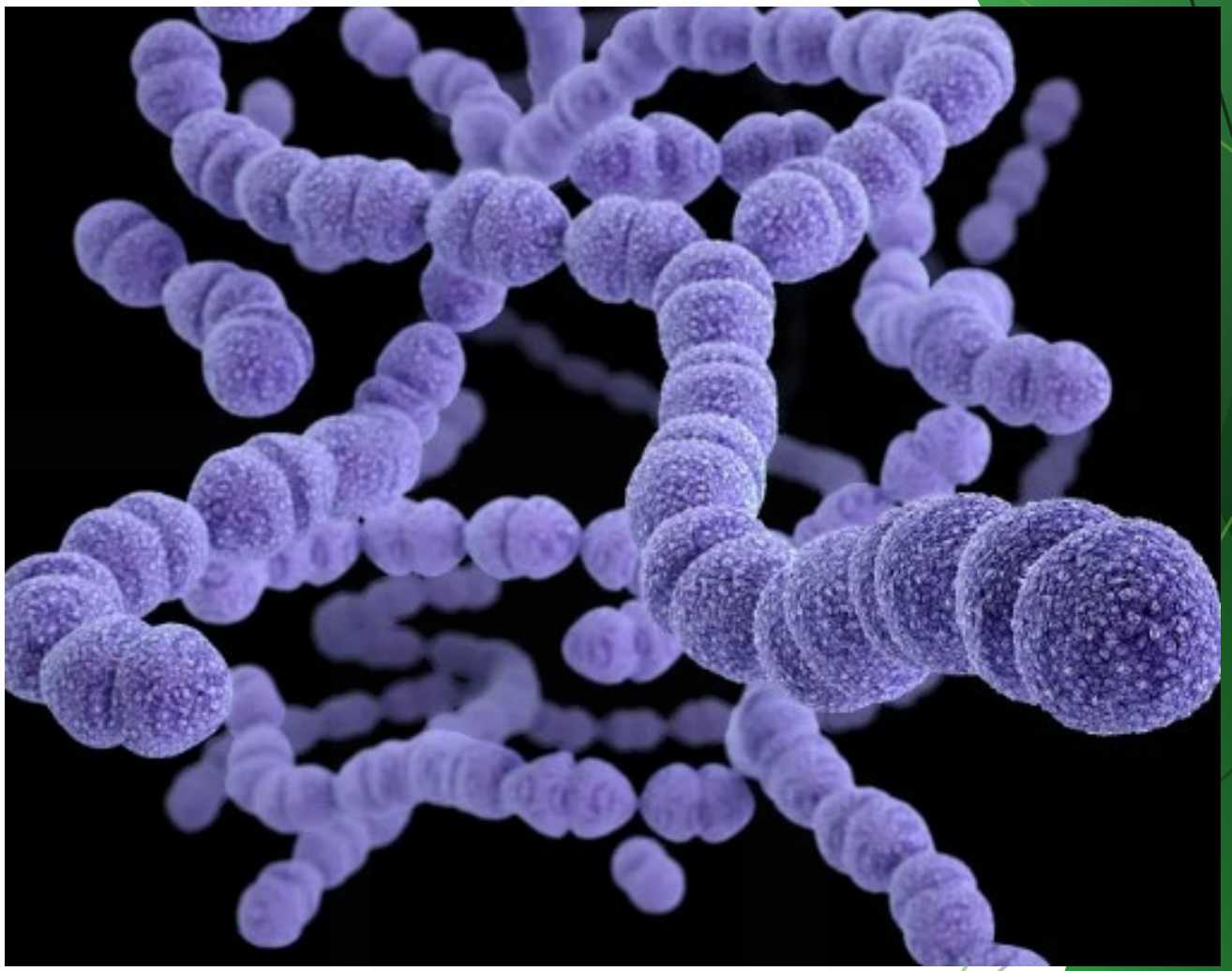
6. Pneumococcal Vaccine

- Polysaccharide 23-valent (Pneu-P-23)

Formulation	Pneumovax ®23 (Pneu-P-23)
Vaccine Type	Pneumococcal polysaccharide 23-valent
Formats Available	0.5 ml single dose prefilled syringe *or* 0.5 ml single dose vial
Authorized Age Group	65 years and older
Injection Volume	0.5ml
Dose Schedule	1 dose
Product Monograph	Pnuemo PM



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Pneu-P-23 Vaccine

- There are more than 92 different types of pneumococcal bacteria.
- The Pneu-P-23 vaccine protects against 23 types that can cause serious pneumococcal infections.
- Pneu-P-23 vaccine efficacy against invasive pneumococcal disease (IPD) is estimated to be 50% to 80% among the elderly and in high-risk groups.
- Most people need only one dose of Pneu-P-23 vaccine. Some people living with certain medical conditions require a second dose of Pneu-P-23 vaccine; these clients can consult with their health care provider to determine if/when a second dose is required.
- Pneu-P-23 vaccine may be given either IM or subcutaneously (SC).

Pneumococcal Polysaccharide (Pneu-P-23) Vaccine Fact Sheet

https://www.gov.mb.ca/health/publichealth/factsheets/ppv23.pdf

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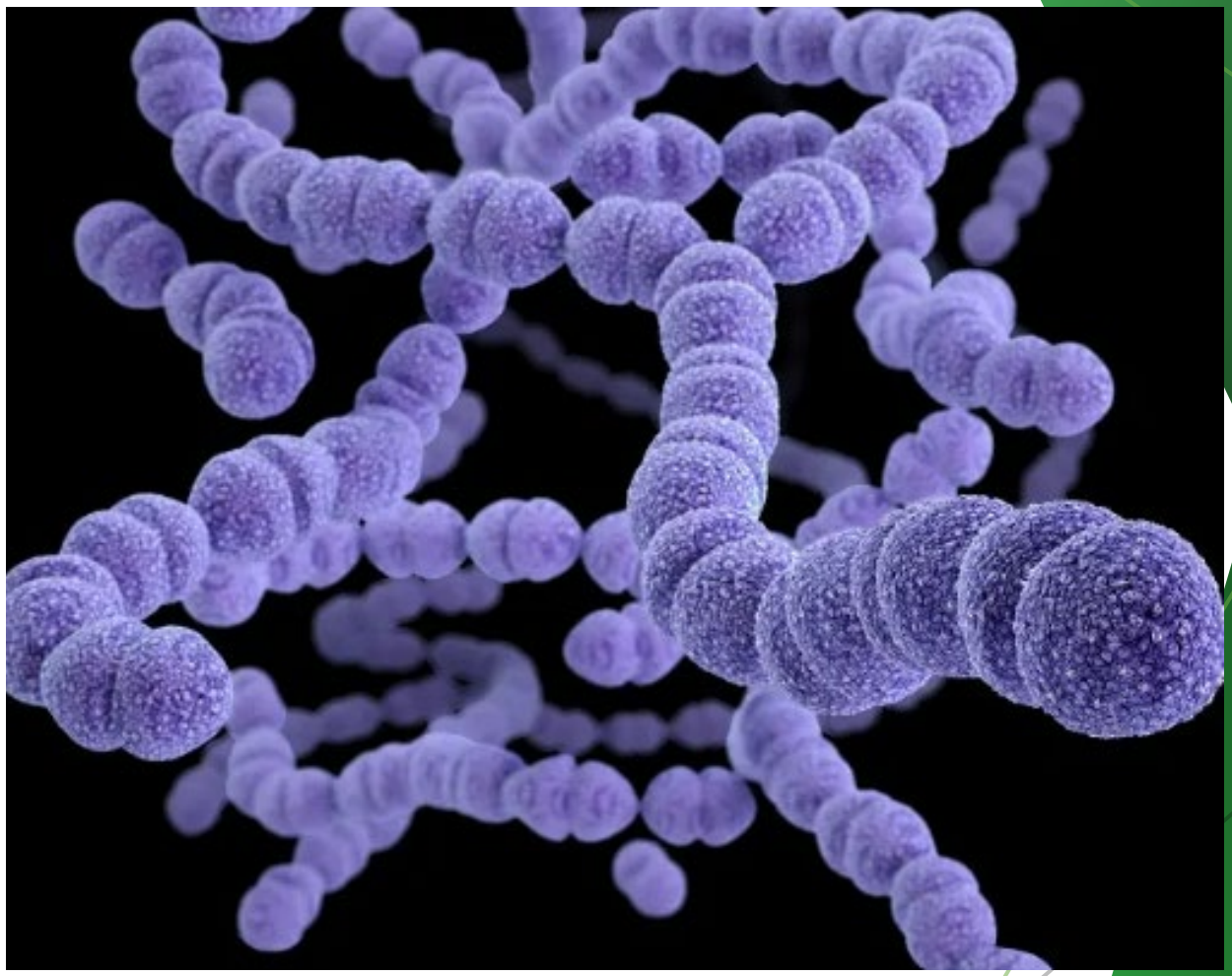
7. Pneu-P-23 Vaccine Eligibility Requirements and Contraindications

- Eligibility Criteria
- Contraindications



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Pneu-P-23 Vaccine Eligibility Criteria

- The Pneu-P-23 vaccine is approved by Health Canada and is available free-of-charge to all Manitobans who are 65 years of age and older, to residents of personal care homes, as well as to some people two years of age and older who are at increased risk of pneumococcal infection due to a specified medical condition and/or lifestyle factors.

- Please see Manitoba Health Eligibility Criteria for Publicly-Funded Vaccines at https://www.gov.mb.ca/health/publichealth/cdc/vaccineeligibility.html for further details.

- In the fall of every year, Manitoba Health routinely sends letters to individuals who turn 65 years of age, to inform them of their eligibility to receive this vaccine.

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Contraindications

- Known severe hypersensitivity to any component of the vaccine.
- Anaphylactic or other allergic reaction to a previous dose of Pneu-P-23 vaccine.
- Administration of pneumococcal vaccine should be postponed in persons suffering from severe acute illness.
- Immunization should not be delayed because of minor acute illness, with or without fever.

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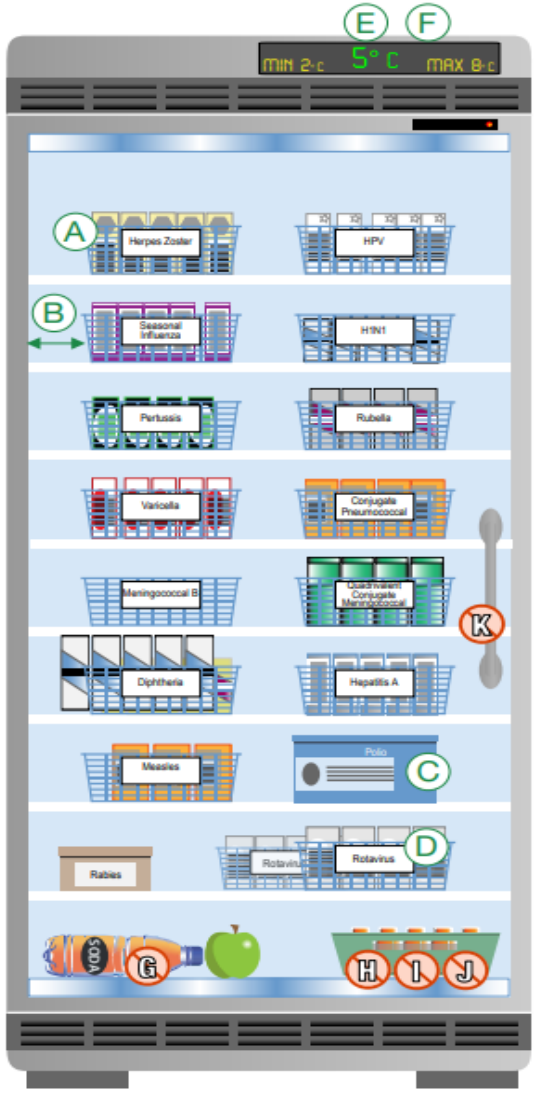
8. Storage and Handling of Vaccines

- Cold Chain and Storage

FIGURE 1: ORGANIZING THE PURPOSE-BUILT REFRIGERATOR



DO:

- (A) Place vaccine in breathable plastic mesh baskets and clearly label baskets by type of vaccine
- (B) Keep baskets 5 – 8 cm from walls and other baske
- (C) Keep vaccine in their original boxes until you are ready to use them
- (D) Keep vaccines with shorter expiration dates to the front of the shelf/basket
- (E) Keep temperature between 2 – 8°C (aim for 5°C)
- (F) Check and log temperature twice a day

DO NOT:

- (G) Store food or drink in refrigerator – only vaccine in vaccine storage unit
- (H) Place vaccine in solid plastic trays or containers
- (I) Store vials out of their original individual packagir
- (J) Place vaccine in drawers or on floor of refrigerato
- (K) Open door more than necessary

Source: National Vaccine and Storage Guidelines: vaccine-storage-entreposage-vaccins-eng.pdf (canada.ca)

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Cold Chain and Storage

- Vaccines must be stored in a refrigerator according to manufacturer's requirements prior to use.
- Protocols for monitoring and recording the vaccine storage temperature at designated frequencies during the operation of a clinic and after hours must be adhered to.
- Vaccines should be organized in the refrigerator by grouping the same vaccine products together in a labeled container.
- Space should be left between the vaccine packages in the refrigerator to allow air to circulate.

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Cold Chain and Storage Immunization Stations

- The Cold Chain refers to the process used to maintain optimal conditions during the transport, storage, and handling of vaccines, starting at the manufacturer and ending with the administration of the vaccine to the client.
- Cold Chain Protocol- Vaccines and Biologics: https://www.gov.mb.ca/health/publichealth/cdc/protocol/ccp.pdf
- Immunizers are responsible to ensure appropriate temperature storage of vaccines is maintained at their immunization station according to manufacturer's requirements.
- Insulated containers (coolers) with refrigerated gel packs are used to temporarily store a small quantity of product at each individual immunization station.
- Insulating material should be used as a barrier to prevent direct contact between the vaccine and the refrigerated packs.
- Refrigerated gel packs should be replenished as needed throughout the clinic to ensure cold chain of vaccines is maintained.
- Vaccines should be kept in their original packaging until the immunizer is ready to prepare and administer the vaccine to protect against breakage, exposure to light, and prevent direct contact with refrigerated gel packs.

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9. Pre-Vaccination

- Informed Consent
- Pre-Vaccination Counselling

Informed Consent

- A health care professional must obtain consent from a client, or from a person authorized to give consent on behalf of a client before a vaccine is administered.
- Consent must be voluntary, obtained by the immunization team, and must be documented appropriately. When consent is not received or immunization is declined, this should be indicated on the consent form/charting system.

Seasonal Influenza and Pneumococcal Immunization Consent Form:
www.gov.mb.ca/health/flu/docs/flupneumo_consentform_letter.pdf

- It is preferred that a parent or legal guardian provides consent for a child.
- Clients 16 years to less than 18 years of age:
  - If client presents without a parent or legal decision maker (or without a consent form signed by their parent or legal decision maker) – provide immunization if you believe the minor is able to understand the nature and effects of the information and/or is able to appreciate the consequences of a decision.
- Clients under 16 years of age:
  - If client presents without a parent or legal decision maker (or without a consent form signed by their parent or legal decision maker) – immunizer should first attempt to obtain consent from parent/legal decision maker.
  - If informed consent can not be obtained from a parent or legal decision maker – the immunizer will assess the minor's ability to provide informed consent as a "mature minor" (has the capacity to understand the risks/benefits/outcomes of the vaccine and has been assessed to have the ability to consent on their own).

Provincial Informed Consent Guidelines for Immunization can be located at:
www.manitoba.ca/health/publichealth/cdc/protocol/consentguidelines.pdf

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Pre-Vaccination Counselling

Prior to vaccination, the immunizer should:

- Assess the vaccine recipient's current state of health.
- Provide information regarding the benefits and risks of receiving or not receiving the vaccine.
- Assess contraindication and precaution to receiving the vaccine including any history of potential immediate or anaphylactic hypersensitivity to a previous dose of the vaccine or to any of the vaccine components.
- Evaluate reactions to previous vaccinations.
- Review frequently occurring minor adverse events and potential rare severe adverse events.
- Ensure informed consent obtained from vaccine recipient or parent/legal decision maker.
- Review immunization history.

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10. Vaccine Administration

- Order under the Regulated Health Profession Act
- Infection Prevention and Control (IP&C)
- 7 Rights of Administration
- Assessing the Injection Site
- Positioning Older Children and Adults for Deltoid Injection
- Positioning Infants and Young Children for Deltoid Injection
- Landmarking for Deltoid Muscle
- Positioning Older Children and Adults for Vastus Lateralis Injection
- Positioning Infants and Young Children for Vastus Lateralis Injection
- Landmarking for Vastus Lateralis (Anterolateral Thigh)
- Selecting Needle Size
- Reducing Immunization Injection Pain & Anxiety
- Intramuscular Injection Technique

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Order under the Regulated Health Profession Act

Influenza Vaccinations

- The Order under the Regulated Health Profession Act (vaccine administration) authorizes certain health professionals who do not have influenza vaccine administration as part of their regular scope of practice, the ability to assist in delivering influenza vaccine.
- For the influenza campaign, immunizers authorized under this Order are ONLY able to immunize clients age 5 years and older.
  - ❑ All remaining immunizers, that have vaccine administration as part of their scope of practice are permitted to administer seasonal influenza vaccine to those 6 months of age and up. (With the exception of Pharmacists who are permitted to administer to those 2 years of age and up in a pharmacy setting and to those 6 months and up when hired as a Shared Health immunizer in a vaccine clinic setting.)
- If influenza vaccine administration is NOT a part of your regular scope of practice and you have been hired to immunize clients as part of this influenza vaccine campaign, please refer to the *Order* to determine if you can participate in this initiative.

Pneu-P-23 Vaccinations

- ALL Pneu-P-23 vaccines MUST be administered by a health care professional who is registered or licensed to provide health care under an Act of Legislation and who is authorized under the act to administer vaccines.
- Immunizers added under the new *Order* are **NOT authorized** to administer Pneu-P-23 vaccine. If a client presents to a clinic and you are not authorized to administer this vaccine, you must refer the client to an immunizer who is authorized as part of their regular scope of practice to administer the Pneu-P-23 vaccine.
- If there is not an immunizer who is authorized to administer this vaccine to a client, the client will need to be referred to an alternate health care provider.

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Infection Prevention and Control (IP&C)

- Staff providing immunizations in any setting should follow routine practices at all times and perform a Point of Care Risk Assessment (PCRA) to determine what Personal Protective Equipment (PPE) is required: https://sharedhealthmb.ca/files/routine-practices-protocol.pdf
- PPE must continue to be available for all staff (medical grade masks, eye protection, N95 respirators).
- Please visit https://www.gov.mb.ca/health/publichealth/cdc/ipc.html to review the *Immunization Program/Clinic: Infection Prevention and Control (IP&C) Procedures/Processes* and for additional guidelines and forms.

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7 Rights of Administration

As part of preparation and administration of the vaccine, the health care provider is responsible for checking the expiry date and the following 7 rights:

1. Right client
2. Right time/schedule
3. Right vaccine (and diluent)
4. Right dose
5. Right route/needle/technique
6. Right injection site
7. Right documentation

Manitoba

Assessing the Injection Site

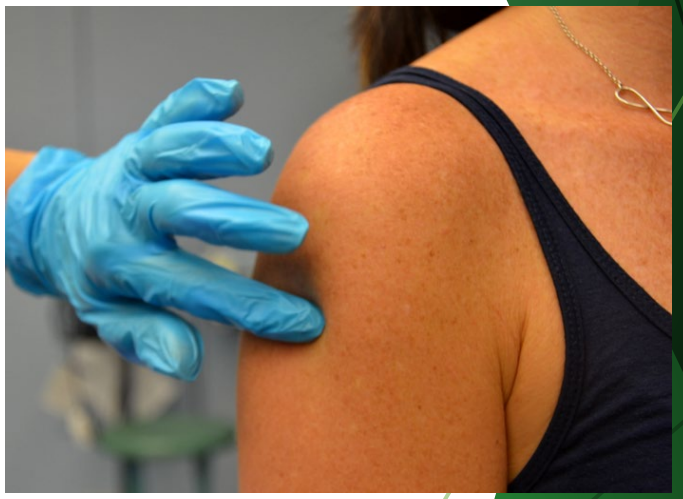
- The two recommended intramuscular (IM) injection sites for immunizations are the deltoid and vastus lateralis (anterolateral thigh) muscles.
- For the majority of adults and children over the age of 1 presenting to the immunization clinics, the deltoid will be the most appropriate site for immunization.
- The vastus lateralis may be considered as an alternate site for young children or if the deltoid muscle is assessed as not an appropriate site.
- For infants less than 12 months of age, intramuscular immunizations are administered in the vastus lateralis as this site provides a larger muscle mass for better absorption.
- Do not administer active immunizing agents into the gluteal muscles (buttocks) due to the risk of reduced efficacy from poor absorption if the injection does not reach the muscle.
- When choosing the appropriate injection site, inspect the skin's surface for bruises, scars, or inflammation and palpate the site for masses, edema, or tenderness.
- Do not inject vaccine if any of these are found as there may be interference with absorption of the vaccine.
- If unavoidable, vaccines may be administered through a tattoo or superficial birthmark.

Manitoba

Positioning Older Children and Adults for Deltoid Injection

The deltoid muscle is a good candidate for intramuscular vaccination for clients older than one year of age for several reasons:

- It is easily accessible to the healthcare professional.
- It is a superficial and fairly thick muscle in most children and adults.
- It has an extensive blood supply, which promotes absorption of the vaccine after injection.



The following technique should be used to correctly position older children and adults for injection into the deltoid:

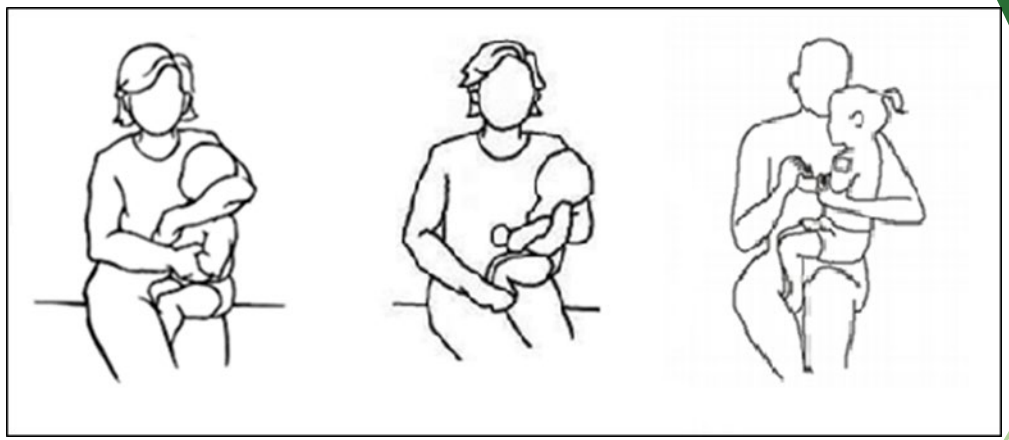
- Advise older children and adults to sit in a straight-back chair and position their arm in a manner that exposes the deltoid muscle and relaxes the arm.
- Encourage the client to place their forearms and hands in a relaxed position on their upper thigh.

Manitoba

Positioning Infants and Young Children for Deltoid Injection

The following technique should be used to correctly position infants and younger children for injection into the deltoid:

- Instruct younger children to sit sideways on the lap of the parent/caregiver.
- The arm being used for the immunization should be held close to the child's body by the parent/caregiver, while the other arm is tucked behind the parent's/caregiver's back.
- Ask the parent/caregiver to firmly hold the child's legs and feet between his or her thighs, and control them with their free hand, if necessary.
- The deltoid site should be clearly visible, and the child is firmly stabilized by the parent/caregiver to prevent movement during the immunization.



Adapted from BC CDC Immunization Manual

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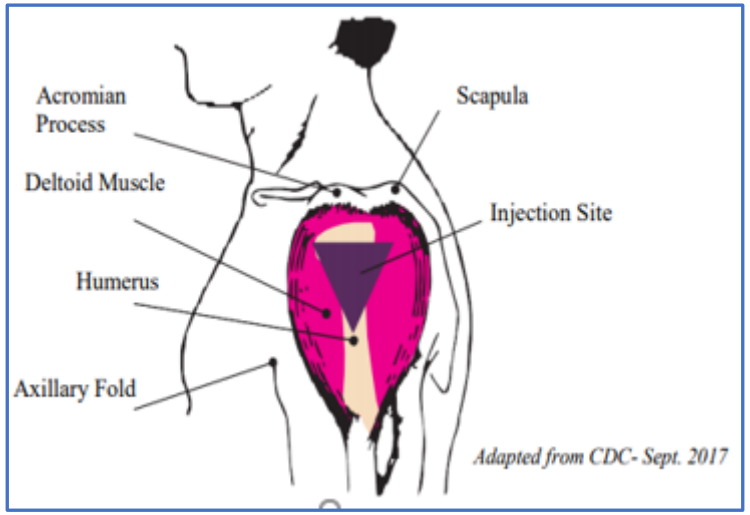
Landmarking for Deltoid Muscle

- Expose the shoulder completely.
- Identify the injection site by drawing an imaginary triangle with its base at the lower edge of the acromion process and its peak above the level of the axillary fold. The injection site is in the center of the triangle – the central and thickest portion of the deltoid muscle.
- For adults and older children, the target zone for injection is 2.5 to 5 cm (1 to 2 inches) below the acromion process. In younger children, the target zone may be closer to 2.5 to 3 cm (approx. 1 inch) below the acromion process depending on the size of the muscle. To avoid causing injury, do not inject too high (near the acromion process) or too low.



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Positioning Older Children and Adults for Vastus Lateralis Injection

- If, upon assessment, the deltoid is deemed inadequate for injection, immunization may be injected into the vastus lateralis (anterolateral thigh).

The following technique should be used to correctly position older children and adults for injection into the vastus lateralis:

- Position older children and adults in a seated, supine, or side-lying position that exposes the vastus lateralis site.

Manitoba

Positioning Infants and Young Children for Vastus Lateralis Injection

The following technique should be used to correctly position infants and young children for injection into the vastus lateralis:

- Instruct the parent/caregiver to hold the infant or young child in a "cuddle" or semi-recumbent position on their lap.
- The child's head should rest on the parent's/caregiver's arm.
- Ensure the child's arm that is positioned closest to the parent/caregiver, is tucked into the caregiver's side, or placed behind the caregiver's back. The child's other arm is controlled with the caregiver's arm and hand placed over it.
- Instruct the parent/caregiver to hold the child's outside leg around the calf or knee. Alternately, the parent/caregiver may place the child's feet between their legs and secure the child's legs with their hand.
- The vastus lateralis site should be clearly visible and the child is firmly stabilized by the parent/caregiver to prevent movement during the immunization.

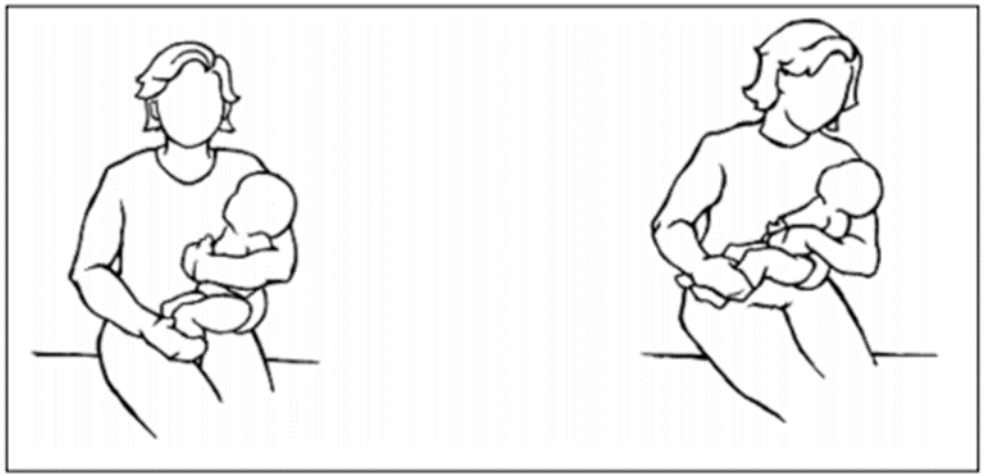

Image: BC Centre for Disease Control Communicable Disease Manual

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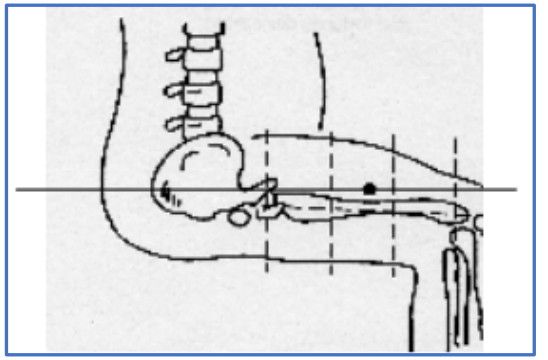
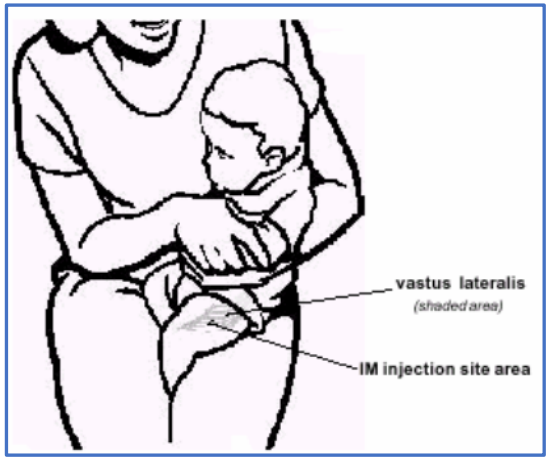
Landmarking for Vastus Lateralis (Anterolateral Thigh)

- Define the site by dividing the space between the trochanter major (greater trochanter) of the femur and the top of the knee into three 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.





Images: BC Centre for Disease Control Communicable Disease Manual

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Selecting Needle Size

- For intramuscular injection (IM), select a needle size that is long enough to reach the largest part of the muscle, but not so long to reach the underlying bone. This helps to prevent the vaccine from being deposited into the subcutaneous (fat) tissue which:
  - Decreases the chance of local adverse effects (less redness and swelling at the injection site).
  - Ensures efficacy.
- For most clients, a 1" needle is usually used. Needle length may need to be adjusted based on the clinician's assessment of muscle size and subcutaneous tissue present.
- 1 ½" needle may be considered for individuals who are assessed as having larger muscle mass and a larger amount of subcutaneous tissue, such as well-developed or muscular individuals or individuals considered obese.
- 5/8" needle may be considered for individuals assessed as having less muscle mass and less subcutaneous tissue such as a younger child or elderly with under-developed or smaller amounts of muscle mass.

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Reducing Immunization Injection Pain & Anxiety

- Encourage comfort and relaxation
  - Encourage slow deep breathing.
  - Some clients may benefit from being vaccinated in a private room and with a support person attending the appointment with them.
  - If client reports a history of fainting with needles or feeling dizzy, ensure they are lying down when receiving the injection and remain lying down for a few minutes post immunization.

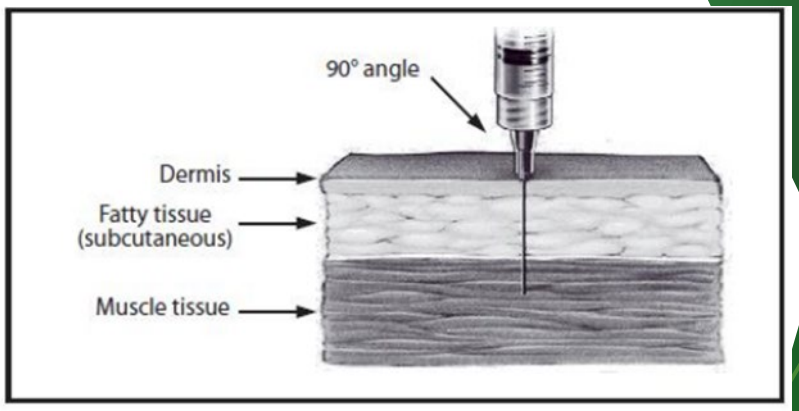
- Distraction
  - Redirect the client's attention away from the needle. Talk with them or ask them questions about a subject other than immunization, encourage them to read, play a video game, watch a video on their phone, play music, practice slow deep breathing or rub their arm.

- Topical Anesthetics
  - Clients may attend an immunization clinic with a numbing cream, patch, spray or other agent that has been applied prior to arriving at the clinic. These agents numb the surface of the skin so the individual will feel little to no pain with the injection. Whenever a topical anesthetic is applied, it must be removed before proceeding with the immunization.

Manitoba

Intramuscular Injection Technique

- Perform hand hygiene by washing hands with soap and water or alcohol-based hand sanitizer.
- Cleanse the injection site with a new alcohol swab by circling from the center of the site outward for 1-2 inches. Allow to dry to avoid a burning sensation on insertion of the needle.
- If client's muscle mass is small, bunch or squeeze the muscle between the non-dominant thumb and fingers before and during the injection to increase muscle mass and minimize the chance of striking underlying bone. This bunching method is commonly used for pediatric, geriatric or emaciated clients with reduced muscle mass when using a 1" needle.
- Alternatively, place your thumb and forefinger on either side of the site of injection and press the area flat. This method is recommended when clinical judgement has deemed a 5/8" needle appropriate for use based on client assessment.
- Insert the needle quickly at a 90° angle into the muscle.
- Do not aspirate (do not pull back on the plunger).
- Inject the vaccine while maintaining stability of the limb and needle.
- Remove the needle in a swift motion.
- Activate the safety mechanism and discard into the sharp's container.
- A cotton ball can be used to apply pressure to the injection site to minimize bruising. Do not massage the injection site as this may damage underlying tissue. Use of adhesive bandages is not routinely recommended.



Adapted from CDC

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11. Handling Multiple Products

- Administering Multiple Vaccines

Image: CBC.ca

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Administering Multiple Vaccines

Individuals receiving multiple vaccinations at the same clinic visit is widely supported by the medical community:

- "*Generally, vaccines have similar immune responses whether vaccines are given at the same time or at different visits. Concomitant administration of most routine vaccines at the same visit does not result in increased rates of adverse reaction.*" (Health Canada, 2021)
- "*Giving multiple vaccines at one visit helps to ensure that people are up to date with the vaccines required for their age and risk factors*." (Health Canada, 2021)
- "*A number of studies and reviews have been conducted to examine the effects of giving various combinations of vaccines simultaneously. These studies have shown that the recommended vaccines are as effective in combination as they are individually, and that such combinations carry no greater risk for adverse side effects*." (WHO, 2020)

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Administering Multiple Vaccines

There are many advantages of administering multiple vaccinations at one visit:

- There is no delay in protection as it ensures individuals are protected against serious diseases earlier rather than later.
- There are fewer vaccine visits which saves time for clients, parents/legal decision makers and health care professionals, is more cost efficient, and enhances vaccine compliance.
- Fewer periods of discomfort for the individual due to the lower number of vaccine visits.

Some anxiety should always be expected from individuals who are about to receive multiple vaccines. Immunizers should be prepared to utilize strategies to reduce immunization injection pain and anxiety.

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Administering Multiple Vaccines

Immunizers should consider the following practices when administering multiple vaccines:

- It is best practice to draw up all required vaccines for the client at the same time; this ensures the client does not have to wait for each vaccine to be prepared between injections.
- Vaccines that are intended for separate administration should never be combined in the same syringe.
- Syringes should be labelled to identify which vaccine each syringe contains.
- The site of administration of each vaccine should be recorded so if an injection site reaction occurs, the associated vaccine can be identified (e.g. upper left deltoid, lower left deltoid)

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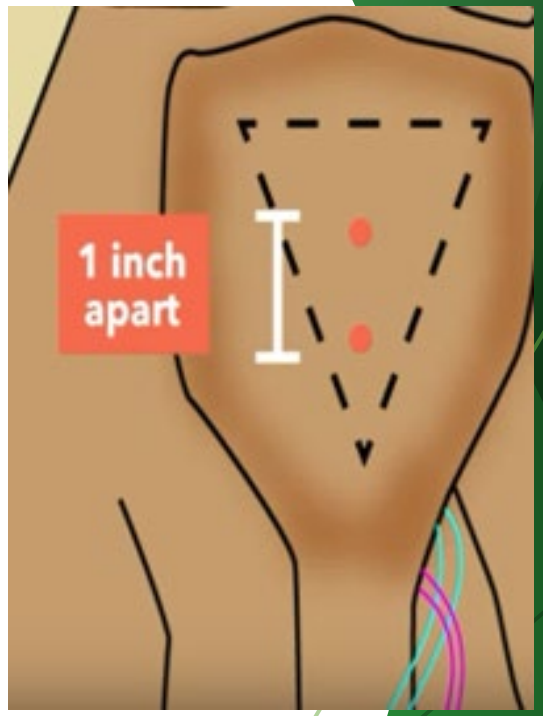
Administering Multiple Vaccines

- When more than one vaccine is to be administered, it is preferable to use separate anatomic injection sites (different limbs) but is not necessary.
- When administering 2 or more vaccines in the same limb, separate the injection sites by as much distance as possible. A separation of at least 2.5 cm (1 inch) is preferred so local reactions are unlikely to overlap. In individuals where there is insufficient deltoid muscle mass, the anterolateral thigh muscle may be used.
- Vaccines that are known to cause the most stinging or injection site pain should be administered last.



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Administering Multiple Vaccines

- Generally, the maximum volume that can be administered by intramuscular injection in the deltoid is 1 mL, however the average volume may range from 0.5ml up to 2ml (infants and toddlers would fall at the lower end of the range, whereas adolescents and adults would generally fall on the higher end of the range).

- The decision regarding number of injections and maximum volume to be administered in a single injection site should be based on the age and assessed muscle mass of the individual.

Recommended Needle Sizes, Sites and Maximum Volumes for Intramuscular Injection (1,9,28-31)

Age	Site	Needle Length	Max Volume
< 28 days	Vastus lateralis	5/8"	1 mL
1 to < 12 months	Vastus lateralis	1"	1 mL
≥ 12 months to ≤ 2 years	Deltoid	5/8" - 1"	1 mL
	Vastus lateralis	1"	2 mL
> 2 years to < 5 years	Deltoid	5/8" - 1"	1 mL
	Vastus lateralis	1"	2 mL
5 years to 18 years	Deltoid	5/8" - 1"	1 mL[A]
	Vastus lateralis	1"	3 mL[A]
≥ 19 years	Deltoid	1 – 1 ½"	2 mL
	Vastus lateralis	1 – 1 ½"	5 mL

Source: http://www.bccdc.ca/resource-gallery/Documents/Guidelines%20and%20Forms/Guidelines%20and%20Manuals/Epid/CD%20Manual/Chapter%202%20-%20Imms/Appendix_B_Administration.pdf

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12. Post-Vaccination

- Adverse Events
- Post-Vaccination: Treatment of Anaphylaxis
- Adverse Event Following Immunization (AEFI)
- Possible Side Effects

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Adverse Events

- All clients should be monitored for 15 minutes post immunization for any adverse effects/events that may require immediate attention (i.e. syncope or anaphylaxis).
- Clients may be directed to stay for a 30-minute observation period if the immunizer has identified potential health concerns (allergy of concern or history of adverse reactions to immunizations).
- Risk of anaphylaxis is approximately 1 out of 1 million. Though very rare, anaphylaxis can occur following immunization and must be managed quickly and appropriately. If anaphylaxis occurs, the majority of cases arise within 15 minutes. However, some cases occur beyond 30 minutes. Usually, two body systems will be affected such as cardiovascular and integumentary systems.
- It is important that all immunizers have reviewed the site protocol to manage post immunization emergencies (i.e. anaphylaxis). If no site protocol exists, the Provincial Anaphylaxis Protocol: Community Health Immunization can be implemented.
- Well established anaphylaxis response plans should be determined by the immunization team prior to any immunization clinic, including determining roles in anaphylaxis response (e.g. initiating emergency response (911), CPR, epinephrine administration, etc.).

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Post-Vaccination: Treatment of Anaphylaxis

Epinephrine:

- Epinephrine is the lifesaving drug for anaphylaxis.
- It is the first drug that should be administered if anaphylaxis is suspected.
- It will constrict blood vessels, raise blood pressure and pulse, and relax the smooth muscle in the lungs to improve breathing.
- Vastus lateralis is the preferred administration site for IM administration of epinephrine.
- It is a short acting drug. Doses may need to be repeated every 10-15 minutes as per protocol if assessment warrants.
- Within a short time period the client will begin to feel relief.
- Adverse effects of epinephrine may include anxiety, nausea and vomiting, headache, and heart palpitations.

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Adverse Event Following Immunization (AEFI)

- An adverse event following immunization (AEFI) is an unwanted or unexpected health effect that happens after someone receives a vaccine, which may or may not be caused by the vaccine.
- AEFIs need to be reported to the regional Medical Officer of Health (MOH) within seven days of the clinician becoming aware of the AEFI.
- For all serious AEFIs (e.g. anaphylaxis), health care providers must report to the Regional MOH within one business day, which can be done by telephone, followed by the complete report within 72 hours.
- Report adverse events following immunization (AEFI) as per www.gov.mb.ca/health/publichealth/cdc/div/aefi.html#rrp

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Possible Side Effects

- It is much safer to get the influenza vaccine or Pneu-P-23 vaccine than to get the illness. Health Canada approves vaccines based on a review of quality and safety.
- The most common side effects of the standard-dose influenza vaccine are soreness, redness or swelling at the site where the vaccine was given.
- The high-dose influenza vaccine may cause more soreness, redness and/or swelling where the vaccine was given (compared to the standard-dose influenza vaccine).
- The most common side effects of Pneu-P-23 vaccine are soreness, redness and/or swelling where the vaccine was given.
- Other symptoms that may occur are:
  - Fever
  - Headache
  - Fatigue

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13. Documentation and Immunization Records

- Documentation
- Reporting

Image: Sustainable Man

Public Health Information Management System

Manitoba

Documentation

Every vaccine administered must be documented and accounted for:

- All immunization records must include at minimum:
- Client name, birthdate, and Personal Health Identification Number (PHIN)
- Date of administration
- Vaccine product and manufacturer
- Lot #
- Dose
- Site and route of administration
- Provider
- Reason for immunization
- Any other regulatory requirements

Non-Manitoba Residents:

- All doses administered to non-Manitoba residents are to be reported using the appropriate forms.
- For these clients, please indicate on the form "No Personal Health Identification Number (PHIN)".
- Please provide as much information on the person being immunized as possible (e.g. name, date of birth, province or location of residence, health number from place of residence, etc.).
- Completed forms are to be submitted to the location indicated on the form: administration-reporting-form-no-phin.pdf (gov.mb.ca)

Immunization Inputting Form for Health Care Providers
www.gov.mb.ca/health/publichealth/cdc/div/docs/iifhcp.pdf
Some sites (e.g. doctors' offices, hospitals) may unitize the inputting form rather than individual consent forms.

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Reporting

Public Health Information Management System (PHIMS)

- The Public Health Information Management System (PHIMS) is a secure, integrated electronic public health record.
- Registered users of the Public Health Information Management System (PHIMS) have the ability to view client immunization records and directly enter the required immunization information including the informed consent into PHIMS. (*Refer to your region or site's PHIMS access and training requirements.)*
- For those that don't have direct access, the immunization information obtained on the consent form or in the client's medical record is submitted as per your region/site's requirements to be entered into PHIMS so that all immunizations provided in Manitoba are within this immunization registry.
- Once this information has been entered into PHIMS, it is considered the official immunization document/record.

The following link provides further guidance on immunization documentation in PHIMS:
Public Health Information Management System (PHIMS) (phimsmb.ca)

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References

- National Advisory Committee on Immunization (NACI): Statements and publications - Canada.ca
- Communicable Disease Control | Health | Province of Manitoba (gov.mb.ca)
- Recommendations announced for influenza vaccine composition for the 2023-2024 northern hemisphere influenza season (who.int)
- https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2791733
- https://academic.oup.com/eurheartjsupp/article/25/Supplement_A/A25/7036725

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Thank you for completing this

Manitoba Health
Seasonal Influenza
and Pneumococcal Polysaccharide
Vaccine Administration Training Module
2023-2024

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