

# Pneumococcal Disease

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# Outline

- Pneumococcal Disease
- Pneumococcal Vaccines
  - Prevnar 13
  - Pneumovax 23
  - Who is funded to get the vaccine?
- Commonly asked Questions
- Key Messages
- Questions
- References



# PNEUMOCOCCAL DISEASE

What is it and how do you get it?



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# Pneumococcal Disease

- *Streptococcus Pneumoniae* bacteria
  - > 90 types
- Carried by many humans in nasopharynx
  - In many cases doesn't cause illness
  - Some at higher risk for illness from the bacteria
- Cause of invasive pneumococcal disease
  - Pneumonia with secondary bacteremia
  - Bacteremia -> Sepsis
  - Meningitis



# Pneumococcal Disease

- Illness more common in winter and spring
- Pneumonia
  - Fatal in 5-7% of cases of pneumonia
- Bacteremia
  - Fatal in up to 20% of adults
  - Fatal in up to 60% in the elderly
- Treatment
  - Antibiotics



# Pneumococcal Disease

- Transmission:
  - Direct oral contact
  - Respiratory droplets
  - Indirect contact with respiratory secretions of infected or colonized persons.
  - As long as nasal and throat secretions contain large numbers of bacteria
- Incubation period
  - Not clear
  - May be as short as 1-3 days



# Pneumococcal Disease

- Prevention
  - Vaccination against pneumococcal disease
    - Conjugate pneumococcal vaccine (Pevnar 13)
    - Polysaccharide vaccine (Pneumovax 23)
  - Vaccination against influenza
  - Infection prevention and control practices
    - Including hand washing



# PNEUMOCOCCAL VACCINES



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# Pneumococcal Vaccines

## Vaccines available in Canada

- Prevnar 13
  - Inactivated bacteria, conjugate vaccine
  - Protective vs 13 serotypes of *S. Pneumoniae*
  - Estimated to be 75% effective vs invasive pneumococcal disease
  - 0.5mL dose, given IM
  - 2014 - Approved for use in high risk adults 50 years+
    - Funded by MOHLTC – for selected high risk groups
  - 2015 – Health Canada approved for use in adults  $\geq 18$  years
    - Not funded by MOHLTC for this group



# Pneumococcal Vaccines

## Vaccines available in Canada

- Pneumovax 23
  - Inactivated bacteria, polysaccharide vaccine
  - Efficacy 80% in healthy adults, 50-80% in elderly and high risk
  - Protective vs 23 serotypes of *S. Pneumoniae*
  - 0.5mL dose, given IM or SC

In use in Canada since 1983

- Funded by MOHLTC - for selected groups



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# PREVNAR 13

- Ontario Publicly Funded Immunization Schedule
- Dosing



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# Pevnar 13

- **Ontario Publicly Funded Immunization Schedule**

- **Routine Program:** Routine childhood immunizations
- **High Risk Program:** Adults  $\geq 50$  years of age, with  $\geq 1$  of the following:

- Use of immunocompromising therapy
    - » Chemo, radiation, high dose steroids, immunosuppressants
  - Malignancy (cancer)
  - No spleen / non-functional spleen
  - Sickle cell disease, hemoglobinopathies
  - HIV+
  - Congenital immunodeficiencies
  - Transplant recipient
  - *Stem cell transplant recipient* } 3 doses
- 1 dose



# Pevnar 13

## Ontario Schedule - Dosing

- High risk immunocompromised clients  $\geq 50$  years of age
  - Eligible for both Pevnar and Pneumovax
- Ideally, Pevnar is given before Pneumovax
  - Give 1 dose of Pneumovax  $\geq 8$  weeks after the last dose of Pevnar
- If the client has already received Pneumovax
  - Give Pevnar  $\geq 1$  year after the last dose of Pneumovax
- No indication for booster dose



# Prevnar 13

- Who shouldn't receive the vaccine?
  - Severe allergy to any component of the vaccine
  - Severe acute illness
- Minor acute illness, with or without fever isn't a contraindication for vaccination



# Pneumovax 23

- Ontario Publicly Funded Immunization Schedule
- Dosing



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# Pneumovax 23

- Ontario Publicly Funded Immunization Schedule
  - **Routine Program**
    - All adults  $\geq 65$  years of age
    - 1 Dose
  - **High Risk Program**
    - Aged 2-64 years old meeting at least 1 high risk criteria...





# Pneumovax 23

- **High Risk Program (MOHLTC)**
  - 2-64 years of age who meet at least 1 of the following criteria:
    - Residents of nursing homes, homes for the aged, chronic care facilities
    - Chronic cardiac or respiratory disease (e.g. COPD)
    - Diabetes Mellitus (Type 1 and 2)
    - Chronic neurological conditions
    - Chronic kidney disease, nephrotic syndrome



# Pneumovax 23

- **High Risk Program (MOHLTC)**
  - 2-64 years of age who meet at least 1 of the following criteria:
    - Malignancy (Cancer)
    - Chronic liver disease (e.g. cirrhosis, hepatitis B, C)
    - Taking immunosuppressant therapy
    - HIV+
    - No spleen / non-functional spleen
    - Sickle cell disease



# Pneumovax 23

- Ontario Publicly Funded Immunization Schedule
  - Second dose (one in a lifetime) funded for those at the highest risk
  - $\geq 5$  years after 1<sup>st</sup> dose

## Eligible for second dose

- Chronic Kidney Failure or nephrotic syndrome
- Immunosuppressed – due to therapy or disease
- HIV +
- Cirrhosis of the liver
- Asplenia, sick cell disease

**All others** funded for one dose under High Risk Program  
**are not eligible for second dose**



# Pneumovax 23

- Ontario Publicly Funded Immunization Schedule – Dosing
  - **Previously received Prevnar 13**
    - Give 1 dose of Pneumovax  $\geq 8$  weeks after the last dose of Prevnar
  - **Previously received Pneumovax 23 and are eligible for a booster**
    - $\geq 5$  years after last dose of Pneumovax 23



# Pneumovax 23

Who shouldn't receive the vaccine?

- Proof of previous dose, and no indication for a booster
- Severe allergy to any component of the vaccine
- Children under the age of 2 years
- Severe acute illness

Minor acute illness, with or without fever **is not** a contraindication for vaccination



# COMMONLY ASKED QUESTIONS



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# Prevnar 13 and Pneumovax 23

- What if you don't have previous vaccine records for a client?

## Immunize

- Considered them to be unimmunized
- Give immunization(s) appropriate for risk factors and age
- No evidence of adverse events with repeated immunization



# Prevnar 13 and Pneumovax 23

- Can the vaccines be given at the same time?
  - No
- Can the vaccines be given at the same time as the influenza vaccine?
  - Yes, one (not both) may be given at the same time as the flu vaccine





# Prevnar 13 and Pneumovax 23

- What are side effects of the vaccine?
  - Any side effects are usually minor and short duration
    - Swelling and soreness at injection site
    - Itching or rash at injection site
    - Mild fever
    - Rarely – headache, high fever, fatigue



# Key Messages

- *Streptococcus Pneumoniae* can cause invasive infections, including pneumonia, bacteremia, meningitis
- Infections can be fatal, especially in the elderly
- Vaccination can help protect against infection



# Key Messages

- 2 vaccines in Ontario: Prevnar 13, Pneumovax 23
  - Prevnar 13
    - Indicated for those 50+ at highest risk
    - 1 time dose
  - Pneumovax 23
    - Indicated for those 2-64 years deemed high risk AND all  $\geq 65$  years of age
    - 1 x booster dose at 5 years, for those at highest risk



# QUESTIONS?

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