Influenza and Vaccine Updates

Susan Bruce, PHN
October 2015
Outline

• Influenza Vaccination Updates
• Other vaccine updates
• Questions
Why Does Ontario Have a Universal Immunization Influenza Program?

- Protect people against influenza
- Reduce number of cases and severity of cases
- Decrease in cases and severity = decrease in Emergency Room and Health Care Provider visits
- Decreased health care costs
- Offered by a variety of providers to increase accessibility of the vaccine
HISTORY OF INFLUENZA VACCINATION IN ONTARIO
The History of Flu Vaccine in Ontario

1989

• publicly funded for groups at high risk of influenza related complications

• This included seniors and persons with chronic health conditions
The History of Flu Vaccine in Ontario

1993

- Publicly funded program was expanded to include staff of long term care facilities
The History of Flu Vaccine in Ontario

2000

- Influenza vaccine was now publicly funded for all persons over 6 months of age
The History of Flu Vaccine in Ontario

• Pandemic H1N1… what does that mean?

• WHO recommends the strains of influenza that seasonal flu vaccine covers. Strains are identified by seeing what influenza is causing illness in the southern hemisphere of the world.
What Happened in 2009?

• Three vaccine strains were in the seasonal influenza vaccine that was being made
What Happened in 2009?

• In March 2009 Mexico identified a new strain of influenza (H1N1) that wasn’t in the vaccine

• It was classified as an **Epidemic** - a disease that appears as new cases in a population, during a specific period of time and at a rate that substantially exceeds what is expected
What Happened in 2009?

• By April 28, 2009 there were 100 new cases around the world and seven deaths.

• Because the disease was now spreading worldwide, the epidemic became a Pandemic - an epidemic that spreads across a large region.
What Happened in 2009?

• A/California/7/2009 (H1N1) was the name of this new strain

• Since this new H1N1 strain wasn’t in the seasonal influenza vaccine, a separate vaccine was made to cover this pandemic strain
What Happened in 2009?

• So, in 2009, people were offered the seasonal influenza vaccine to cover the 3 strains that were originally identified and also an H1N1 vaccine to cover the Pandemic strain
Influenza Vaccine 2015
Influenza Vaccine 2015

- Previous years the influenza vaccination was trivalent - contained coverage for two A strains and one B strain
Influenza Here and Now

• This year individuals 6 months to 17 years will be offered a Quadrivalent product - contains two A strains and two B strains

• Useful since Influenza B causes greater illness in children
2015-2016
Seasonal Flu Vaccine under 18 years old

• This year the vaccine for ages 6 months-17 years contains:
  ► an A/California/7/2009 (H1N1)pdm09-like virus
  ► an A/Switzerland/9715293/2013 (H3N2)-like virus
  ► a B/Phuket/3073/2013-like virus
  ► a B/Brisbane/60/2008-like virus
This year the vaccine for adults contains:

- an A/California/7/2009 (H1N1)pdm09-like virus
- an A/Switzerland/9715293/2013 (H3N2)-like virus
- a B/Phuket/3073/2013-like virus
Priority Groups

People at high risk of influenza related complications:

- Individuals with underlying, chronic health conditions (e.g. cardiac/pulmonary disorders, renal disease, morbid obesity, diabetes, cancer, weakened immune systems)
- Pregnant women
- The elderly
- Young children, especially under 5 years
More Priority Groups

People capable of transmitting influenza to those at high risk:

• Health care workers
• Household contacts of those at high risk
• Persons who provide child care to children under 5 years of age

Swine and poultry industry workers
Who Should Get the Flu Shot?

• All adults and children over the age of 6 months (unless there is a medical contraindication)

• Virus changes every year, therefore need seasonal vaccination
Statistics

- During the 2014-2015 influenza season, approximately 8000 hospitalizations were reported due to influenza.
- 70% of hospitalized clients were ≥ 65 years of age.
- 601 Canadians died this past flu season from flu-related illness—91% were ≥ 65 years of age.
Adult Influenza Vaccines 2015-2016

1. Agriflu- multi dose vial

2. Fluviral- multi dose vial

3. Influvac- single dose syringe

4. Fluad- single dose syringe (for residents of LTCH who are ≥ 65 years of age)
Flu Clinics 2015

- Oxford County Public Health offers community flu clinics from October 26 - Nov 17, 2015
- Most pharmacies throughout Oxford County offer influenza vaccine to anyone over 5 years of age
- Please encourage everyone to get the flu vaccine
Paperwork

• Two different forms need to be filled out

• One to report who got what vaccine- This is returned to Susan Bruce

• The other to report immunization rates at LTCH and Hospitals-Returned to Lesley Leach
# Part A - Influenza Clinic Information

**Facility Hosting Clinic**

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# Part B - Vaccine Provider Information

**Agency Administering Vaccine**

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Paperwork

• LTCHs and public hospitals are required to report HCW immunization rates by **December 15th** to the local Medical Officer of Health

• Lesley Leach will forward the form when it becomes available
What Causes Illness

- Bacteria are “complete” organisms which means they can live on their own as long as they have a food supply.

- Viruses are “incomplete” organisms that cannot live on their own. They need to get into cells where they grow and multiply.
What Does Vaccination Do?

- Bacteria and viruses have proteins and polysaccharides on their surfaces called antigens.
- Vaccinations can be made from these proteins or from inactivated disease germs.
- Once administered, they create an immune response to provide protection without causing the disease.
PERTUSSIS
Pertussis

• Also called “Whooping cough”, the Bordetella Pertussis bacteria attaches to the cells that line the nose, throat, and bronchi and the resulting toxins damage the cells

• Pertussis toxins also make it difficult for white blood cells to fight infection
Pertussis

• A person can get pertussis disease more than once

• Having pertussis does not provide lifetime immunity, so individuals with the disease may consider vaccination (if due) once they are better
Pertussis Vaccination


• According to the Publicly Funded Immunization Schedule for Ontario, March 2015:
Pertussis

- Adults who have not previously received Tdap vaccine at ≥18 years of age are eligible to receive 1 Tdap booster dose in lieu of their Td booster. However if the Tdap booster dose is required earlier, they are eligible to receive 1 dose of Tdap vaccine regardless of the interval since the last dose of tetanus or diphtheria containing vaccine
Pertussis Vaccination

- Tdap is the vaccination that is available for adults in Ontario
- Tdap = Tetanus, Diphtheria, and acellular Pertussis
- If your facility has an inspected vaccine fridge the vaccine can be ordered from Public Health. Can also be administered by Health Care Providers
Pertussis Vaccination

• Children receive Pertussis in 5 of their childhood vaccination

• Since 2003, adolescents have received a dose of Pertussis vaccination with their 14-16 year booster. These individuals are still eligible for an adult booster
Pertussis

• An adult booster of pertussis was not publicly funded at all prior to August 2011

• Anyone immunized in adulthood (≥ 18 years of age) prior to August 2011 would have received Td only and is eligible for booster

• Pertussis is only available in a combination vaccine in Ontario
PNEUMOCOCCAL DISEASE
Pneumococcal Disease

• 90% of disease is caused by 23 strains of pneumococci

• Symptoms of invasive pneumococcal disease differ based on age of individual but can include ear infections, bacteremia, meningitis, or septicemia
Pneumococcal Vaccines

• Two products are available in Ontario for seniors

1. Pneumo 23
2. Prevnar 13
Pneumo 23

- A polysaccharide vaccine that was first introduced in Ontario in 1996
- Pneumococcal bacteria are grown; polysaccharide is then extracted and a vaccine is created. Administration of the vaccine creates antibodies which will coat the surface of the bacteria (if exposed) and allow the white cells to kill off the germ
- One dose is publicly funded for everyone ≥ 65 years of age
Pneumo 23

- One dose is publicly funded for everyone ≥ 65 years of age
- Individuals 2-64 years of age are eligible for one publicly funded dose, **if** they meet certain criteria, as per the Publicly Funded Immunization Schedule
- Included in this criteria are “Residents of nursing homes, homes for the aged and chronic care facilities or wards”
Under 65 years of age Pneumo
23 Eligibility

• 1. Individuals with chronic respiratory disease (excluding asthma, except those treated with high-dose corticosteroid therapy)
• 2. Individuals with chronic cardiac disease
• 3. Individuals with chronic liver disease (including hepatitis B and C, and hepatic cirrhosis due to any cause)
• 4. Individuals with chronic renal disease, including nephrotic syndrome
• 5. Individuals with diabetes mellitus
• 6. Individuals with chronic cerebrospinal fluid leak
• 7. Individuals with asplenia (anatomical or functional), splenic dysfunction, sickle-cell disease and other sickle cell haemoglobinopathies
• 8. Individuals with primary immune deficiency
• 9. Individuals with conditions associated with immunosuppression (e.g., malignant neoplasms, including leukemia and lymphoma)
• 10. Individuals undergoing immunosuppressive therapy including use of long-term systemic corticosteroid, chemotherapy, radiation therapy, post-organ transplant therapy, certain anti-rheumatic drugs and other immunosuppressive therapy
• 11. Individuals with HIV
• 12. Individuals undergoing solid organ or islet cell transplant (candidate or recipient)
• 13. Cochlear implant recipients (pre/post implant)
• 14. Individuals with chronic neurologic conditions that may impair clearance of oral secretions
• 15. Individuals undergoing HSCT (candidate or recipient)
• 16. Individuals with congenital immunodeficiencies involving any part of the immune system, including B-lymphocyte (humoral) immunity, T-lymphocyte (cell) mediated immunity, complement system, properdin, or factor D deficiencies), or phagocytic functions
• 17. Residents of nursing homes, homes for the aged and chronic care facilities or wards
Pneumo 23

- No booster required unless client/resident is high risk

- Individuals are eligible to receive a 2nd dose (one lifetime re-immunization dose) of Pneu-P-23 if they meet the following high risk criteria:
Pneumo 23 Booster Dose Criteria

- Functional or anatomic asplenia or sickle cell disease
- Hepatic cirrhosis
- Chronic renal failure or nephrotic syndrome
- HIV infection
- Immunosuppression related to disease or therapy
• A pneumococcal conjugate vaccine that has been publicly funded for high risk adults ≥ 50 years of age since December 2014

• “Conjugate” means the purified polysaccharides (sugars) from the bacteria are linked together by a purified protein
High Risk Criteria for Prevnar 13

- Individuals who have undergone HSCT (3 doses)
- Individuals with HIV (1 dose)
- Individuals with other immunocompromising conditions including (1 dose):
  a. Asplenia (anatomical or functional)
  b. Sickle cell disease or other hemoglobinopathies
  c. Congenital immunodeficiencies involving any part of the immune system, including B-lymphocyte (humoral) immunity, T-lymphocyte (cell) mediated immunity, complement system (properdin, or factor D deficiencies), or phagocytic functions
  d. Immunosuppressive therapy including use of long term corticosteroids, chemotherapy, radiation therapy, post-organ-transplant therapy, biologic and non-biologic immunosuppressive therapies for rheumatologic and other inflammatory diseases
  e. Malignant neoplasms including leukemia and lymphoma
  f. Solid organ or islet cell transplant (candidate or recipient)
Prevnar 13

- No boosters needed after appropriate number of doses given
- Can be ordered through public health or administered at the Health Care Provider’s office
Prevnar 13 and Pneumo 23

- The conjugate vaccine (Prevnar 13) elicits immune memory so offers a better antibody response.

- The polysaccharide vaccine (Pneumo 23) is still useful for high risk individuals since it offers protection against 10 extra types of pneumococcal bacteria.
Prevnar 13 and Pneumo 23 dosage interval

- Refer to table 15 of the Publicly Funded Immunization Schedule for interval between vaccines, if the client/resident is eligible for both

- 1 dose of Pneu-P-23 should be given ≥8 weeks after the last dose of Pneu-C-13 (except for HSCT recipients see Table 14 for intervals)

- Alternatively if Pneu-P-23 has already been received, Pneu-C-13 should be given ≥1 year after the last dose of Pneu-P-23
Shingles

- Caused by varicella-zoster virus, which is in the herpes family.
- Immunity develops after chicken pox disease, but the virus stays in the body in the dorsal root ganglia nerve cells which are located next to the spinal cord.
- Reactivation occurs as a result of waning immunity to the varicella-zoster virus, often as a result of aging.
Shingles

- Only contagious to individuals who have never had chicken pox
- Non immune people who are exposed to shingles may get chicken pox, not shingles
- Rash is similar to chickenpox but is localized to the area where the infected nerve cells are
Shingles Vaccination (Zostavax)

• Vaccination with the Shingles vaccine should be delayed for one year after having the disease

• Zostavax is a live vaccine so consult a Health Care Provider if the client is immunocompromised
Shingles Vaccination (Zostavax)

- Not publicly funded in Ontario
- Can be administered after age 50 years
- Approximate cost is $200
- No boosters required
Thank you!

Any questions....