Ottawa | Public Health / Santé publique

Update on Measles

Ottawa Public Health
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Objectives

- Review local and international measles epidemiology
- Understand impact and risks of measles transmission in health care settings with a local example
- Review measures to prevent measles transmission and related challenges.

Quiz : True or False

- The measles virus can stay in suspension in the air and infect people for up to 2 hours.
- You need to be exposed for at least 3 hours to an infected person to become infected with measles
- There is a significant resurgence of measles in Europe

Quiz: True or False

- A previously unimmunized person will not benefit from MMR vaccine after measles exposure.
- Nosocomial transmission of measles is extremely rare
- Measles is a leading cause of childhood mortality globally

Resurgence of measles in Europe

- Large outbreaks in last few years, mostly D4 strain.
- Spreading to European countries and elsewhere
- 33 countries have several thousand cases
- France, Denmark, Germany, Switzerland, Belgium, Italy, Spain, Eastern Europe (Bulgaria, Romania, Russia), Turkey, etc.

Measles in Europe

- France: over 7000 cases in 2011 only, children under one particularly affected. 2 deaths, 8 neurological complications.
- UK: impact of the Wakefield “study”
- Underimmunized populations.
- Currently WHO and PHAC travel advisory

Examples

- Bulgaria: 326 cases transmitted in acute care settings (mostly non HCW). Outbreak: over 24 000 cases so far (following 1 imported case from Germany).
- Geneva: related to France outbreak. 80 cases in 2011 only. Mostly children. Several hospitalized.

International measles epi

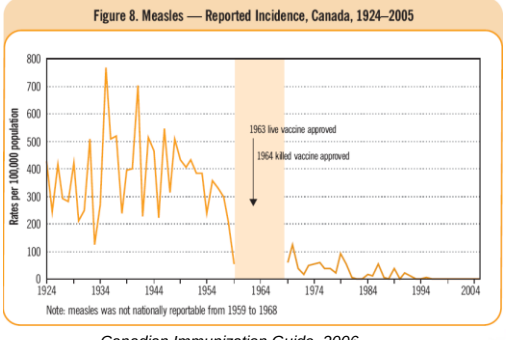
- Australia: large scale exposure at surf carnival, travel related cases by plane ex. Malaysia, significant exposures in ED in Victoria.
- Recent cluster in New Zealand
- USA: Rhode Island, Pensylvannia, Utah, Minnesota, Texas, Michigan, Florida, etc. Etc.
- Endemic in many parts of Asia and Africa

Characteristics of measles

- Measles is a leading cause of preventable death among young children globally.
- Measles complications include pneumonia (1/20), acute encephalitis (1/100), hepatitis, deafness, permanent brain damage and sclerosing panencephalitis (1/100 000).
- In developed countries, complication rates can be lower.
- There is no treatment for measles
- 2 doses of the MMR vaccine is over 95% effective

Canadian measles outbreaks

- Ottawa 2010-2011 (7 cases)
- Québec 2011
- Saskatchewan
- British Columbia
- Toronto 2008
- Etc.



Canadian Immunization Guide, 2006

Ottawa outbreak

- First case of measles since 2002
- First local transmission of measles in over 15 years

Characteristics of cases

- Classical rash , High fever, Bed ridden
- Liver involvement
- 1 was hospitalized, 2 were referred to ID as condition was deteriorating
- All recuperated without any serious complications
- All born on or after 1970 (age range 13 to 40 years old)

Caracteristics of cases part 2

- 5/7 females
- All received no or only dose of MMR
- Airborne precautions : lessons learned.
- Incubation period was on average close to the 3 week maximum.

Measles coverage rates in Ottawa

- No vaccine registry
- ISPA: OPH has data on children in elementary and high schools.
- Vaccine coverage between 30 to 98% depending on cohorts and schools.
- About 1-3% of children in Ottawa schools have an exemption from immunization for conscience or religious beliefs.
- Day nurseries act
- No data for the adult population.
- Several people come to Ottawa when they are too old for school immunization surveillance: partial data.

Contacts

- Measles considered eliminated in Canada
  - Eg 1 case = outbreak
- Intensive contact tracing and PEP is recommended intervention to prevent important outbreak
- Some groups of the population cannot receive the vaccine and must be offered immune globulins in post exposure
- Contact tracing is required under MOHTLC infectious diseases protocol, which is binding via the Health Protection and Promotion Act

Contacts

- Overall contact tracing strategy is responsibility of OPH.
- Contacts that are employees of a health care institution are the responsibility of the employer (occupational health).
- Under the HPPA and PHIPA, public health is authorized to collect information. Health care facilities must share requested information with OPH.
- Contacts may be referred by OPH to health care providers for post exposure management.

Contact management

- Contacts can be defined as immune or susceptible.
- Contacts should be notified of exposure and asked to self monitor for symptoms during the presumed incubation period.

Immune contacts

- People born before 1970
- People with documented Measles disease in the past
- People with 2 documented doses of MMR vaccine

Susceptible contacts

- Eg: can become infected when exposed. Should be offered post exposure prophylaxis
- Children younger than 12 months
- People born after 1970, with less than 2 doses of MMR vaccine.
- People with very severe immune suppression (for example bone marrow transplant) even if born before 1970 or have received full course of immunization.

PEP: Vaccine

- Susceptible contacts born after 1970 and older than 12 months old should receive 1 dose of MMR vaccine within 72 hour of exposure.
- Contra-indications:
  - Younger than 12 months
  - Pregnancy
  - Severe immune suppression

PEP Immune globulins

- Contacts that are:
  - Younger than 12 months
  - Susceptible pregnant women
  - Severely immunocompromised patients
  - On a case by case basis may include other groups
- Must be administered within 6 days (3 is better)
- 0.25 ml/kg or 0.5 for immunocompromised patients up to 15ml.

Measles and ICP

- Most contagious communicable disease
- Airborne transmission
- Infectiousness starts 4 days before rash onset
- Virus stays in suspension in the air for up to 2 hours
- Case reports of transmission occuring even after case has left a hospital setting.

Challenges in IPC

- Time from triage to physician assessment can be several hours
- Symptoms non specific (ILI + rash)
- Disease uncommon in Canada
- Defined number of neg. Pressure rooms available
- Extremely contagious, airborne
- Contact tracing in hospital: determining who was where when can be challenging (visitors, different areas of ED, etc.)

Differential diagnosis

- Scarlet fever
- Stevens Johnson syndrome
- Allergic reaction to drugs
- TB
- Rubella, chicken pox, other exanthemas (children especially)
- Influenza like illness
- Hepatitis
- Etc.

Important considerations

- MMR vaccination program in the health care workplace
- Triage awareness
- Access to IPC consultation 24/7
- Window periods for contact tracing
- Large number of contacts resulting from one exposure in health care setting
- Clinical guidance for contact management
- Emergency preparedness (emerging diseases)

Quiz answers

Quiz : True or False

- The measles virus can stay in suspension in the air and infect people for up to 2 hours. *True*
- You need to be exposed for at least 3 hours to an infected person to become infected with measles. *False*
- There is a significant resurgence of measles in Europe . *True*

Quiz: True or False

- Previously unimmunized people will not benefit from the MMR vaccine post measles exposure. *False*
- Nosocomial transmission of measles is extremely rare. *False*
- Measles is a leading cause of childhood mortality globally. *True*

Resources

- Canadian Immunization Guide
- PHAC
- WHO
- PIDAC
- Coalition for Immunization Awareness (CPHA)
- Ottawa Public Health 613-580-6744
- www.ottawa.ca/health