Measles Information
for Health Care Providers

Reporting Obligations

Reporting Suspect or Confirmed Cases:

Suspected or confirmed cases of measles, whether clinically diagnosed or laboratory confirmed, must be reported to Northeastern Public Health (NEPH) immediately. **Reporting a suspect measles case should not be delayed pending the return of confirmatory laboratory results.**

1. **Call Northeastern Public Health (NEPH) immediately.**
    a. **If calling during business hours (Monday to Friday, 8:30 AM to 4:30 PM)**, call the Infectious Diseases (ID) department at 1-877-442-1212.
    b. **If calling after hours or on holidays**, call the on-call service at 1-877-442-1212.
2. Complete the Reportable Communicable Disease Notification Form and fax the form to the ID department's confidential fax at:
    - Legacy Porcupine Health Unit: 705-360-7324 or
    - Legacy Timiskaming Health Unit: 705-647-5779.

Epidemiology

Aetiologic Agent:

The measles virus is a member of the genus *Morbillivirus* of the family *Paramyxoviridae*.

Clinical Presentation and Complications:

Symptoms begin 7 to 21 days after exposure to a case of measles. Symptoms include:

- Cold-like symptoms, such as fever, coryza (runny nose), cough, drowsiness, conjunctivitis (irritable and red eyes)
- Small white spots (known as "Koplik's spots") can appear on the inside of the mouth and throat.
- After 3 to 7 days, a red, blotchy (maculopapular) rash appears on the face and then progresses down the body.

Complications include diarrhea, pneumonia, otitis media and encephalitis.

Modes of Transmission:

The virus is highly contagious and is spread by airborne droplet nuclei, close personal contact or direct contact with the respiratory secretions of a case. Transmission can occur as a result of the persistence of the virus in the air or on environmental surfaces. Measles virus can remain active and contagious in the air or on infected surfaces for at least two hours.

Incubation Period:

About 10 days but may be 7 to 21 days from exposure to onset of fever, usually 14 days until rash appears.

Period of Communicability:

One day before the start of prodromal period, which is usually about 4 days before rash onset, to 4 days after the onset of rash.

Risk Factors

- Contact with case
- Recent travel
- Not immunized or partially immunized
- Immunocompromised
- Pregnant
- Infants under 12 months of age

Susceptibility

Individuals ≥12 months and born on or after January 1, 1970 are considered non-susceptible to measles if they meet any one of the following:

- Documented evidence of vaccination with two doses of measles-containing vaccine received at 12 months of age and older, and given at least 28 days apart
- Measles IgG positive serology
- Documented evidence of past lab-confirmed measles infection

Individuals born before 1970 are considered immune (except for health care workers and military personnel).

All health care workers require evidence of vaccination with two valid doses of measles-containing vaccine or bloodwork suggestive of immunity (measles IgG reactive) regardless of year of birth.

Laboratory Testing

1. Complete a laboratory requisition form for each sample.
    - **Clearly mark "suspect case of measles" in Testing Indications/Criteria section. The "diagnosis" box should also be checked.**
    - Include the following: patient's symptoms, date of onset of symptoms, exposure history, travel history (if any), and vaccination history.
2. Check expiration of kits.
3. Collect samples:
    - **Two tests for viral detection by PCR (1. urine AND 2. throat OR nasopharyngeal swab) are required to diagnose measles.** Diagnostic serology (both IgG and IgM) is also recommended if available.

Tests to Diagnose Measles	Type of Test	Specimen	Details
Required	Measles virus detection by polymerase chain reaction (PCR)	Urine specimen	Use a sterile container and collect the sample as soon as possible within 14 days of rash onset.
Required	Measles virus detection by polymerase chain reaction (PCR)	Throat or nasopharyngeal specimen	Nasopharyngeal swab: Use the Virus Respiratory Kit and collect the sample as soon as possible within 7 days of rash onset. Throat swab: Use the Virus Culture Kit and collect the sample as soon as possible within 7 days of rash onset.
Recommended if available	Measles acute serology IgG and IgM	Whole blood or serum	Use blood, clotted vacutainer tubes (SST) and collect the sample. Acute serology should be collected within 7 days of rash onset. Serology done in the absence of PCR testing is NOT sufficient to diagnose measles.

4. Send samples to Public Health Ontario Laboratory (PHOL) for testing.

- Clearly mark the outside of the package/shipping bag “STAT”.
- Specimens should be stored in a refrigerator at 2-8°C following collection and shipped to the Public Health laboratory on ice packs.
- STAT measles specimens must be shipped separate from routine specimens.
- Contact PHOL (1-888-604-4567 or after hours 416-605-3113) if you have any questions about specimen collection.

Treatment

There is no specific treatment. Complications can be avoided through supportive care that ensures good nutrition and adequate fluid intake.

Case and Contact Management

Case Management:

Advise your patient to:

- Self-isolate at home while tests are pending. Children may not attend school or childcare. Adults may not attend work. Individuals with confirmed measles need to isolate until the end of the infectious period, which is 4 days prior to rash onset through to 4 days after rash onset (9 days total).
- Avoid contact with non-household contacts, and avoid contact with high-risk individuals (pregnant individuals, infants less than 12 months of age, and immunocompromised individuals).
- If seeking medical attention, advise your patient to contact health care providers and hospital prior to arrival so appropriate IPAC precautions can be initiated to avoid exposures. Wear a mask when presenting to the facility.
- Advise your patient to expect a call from public health.

Minimizing Risk of Transmission:

- **Patients should be managed under Airborne Precautions, Droplet, and Contact precautions**. Continue precautions for four days after start of rash, and for duration of symptoms for patients with immunocompromising conditions (onset of rash is day zero).
- HCWs should complete a point of care risk assessment (PCRA) before entering the room.
- All staff should wear a fit-tested, seal checked N95 respirator, gloves, gown and eye protection, regardless of presumptive immunity, when entering the room, when assessing a patient with suspect/confirmed measles, or when entering the room within 2 hours after the patient has left.
- If the patient is visiting a health care provider office, schedule the patient visit to minimize exposure to others and instruct the patient to wear a medical mask. If the patient is not wearing a medical mask upon arrival, instruct the patient to perform hand hygiene and put on a medical mask if there are no contraindications.
- Immediately place the patient in a single room with negative air flow (airborne infection isolation room [AIIR]) with the door closed and signage posted. If an AIIR is not available, the patient should be immediately placed in a single room with the door closed and the patient should be given a medical mask to wear during the visit.
- After the patient leaves, the door to the room where the patient was examined must remain closed with signage to indicate that the room is not to be used. Allow sufficient time for the air to change in the room and be free of respiratory particles before using the room for non-immune individuals. Two hours is a conservative estimate if air changes are not known. Conduct routine cleaning of the room and equipment once sufficient time has elapsed (2 hours in community office) to ensure adequate air exchange has occurred.

Contact Management:

Contact: Any susceptible person who shared the same room or air space for any length of time during the case's period of communicability, including two hours after the case left the room or air space (e.g., home, school, child care, school bus, doctor's office, emergency room, etc.).

High Risk: The following groups should receive priority for contact identification and management, which may include post-exposure prophylaxis (PEP).

- Infants less than 12 months of age
- Immunocompromised individuals
- Susceptible pregnant individuals
- Household contacts and other contacts with similar intensity/duration of exposure as household contacts.

Post-exposure prophylaxis (PEP)

For information on measles PEP and the timing of immunization following the receipt of an Ig product, refer to:

- Public Health Ontario, Measles: Post-Exposure Prophylaxis for Contacts
- Public Health Ontario, Summary of Recommendations: Measles Post-Exposure Prophylaxis for Individuals Who Are Immunocompromised Due to Disease or Therapy

Additional Resources

1. Measles: Information for Health Care Providers, Public Health Ontario
2. Measles: Post-exposure Prophylaxis (PEP) for Contacts, Public Health Ontario
3. Summary of Recommendations: Measles Post-Exposure Prophylaxis for Individuals Who Are Immunocompromised Due to Disease or Therapy, Public Health Ontario
4. Publicly funded Immunization Schedules for Ontario, Ministry of Health

References

Ministry of Health (MOH), Infectious Diseases Protocol, Appendix 1, 2024.