

Health Care Professionals Questions & Answers

Clinical Management

What is measles?

- Measles is one of the most highly communicable infectious diseases.

What are the symptoms?

- Measles has non-distinct early symptoms (prodrome) that begins with mild to moderate fever and malaise.
- The more distinct syndrome can include conjunctivitis, coryza, cough, photophobia, and Koplik's spots. These spots can be difficult to detect but are seen as bluish-white specks on a rose-red background appearing on the inside of the cheek usually opposite the molars. These symptoms generally appear 2–4 days before the rash.
- Fever is typically present, and usually decreases 2–3 days after rash onset. High fever persisting beyond the third day of the rash suggests that a complication may have occurred.
- The rash is maculopapular often described as feeling like sandpaper and begins on the head often along the face/hairline and spreads downward reaching the hands and feet. In severe cases, the lesions usually become confluent, especially on the face and upper body. The rash usually lasts 4-7 days. Individuals that have been previously immunized may not present with the typical rash.

What is the mode of transmission?

- The virus is transmitted by airborne droplets or direct close personal contact with nasal or throat secretions of infected persons. Less commonly, the virus spreads through contact with articles freshly soiled with nasal and throat secretions.

What is the incubation period?

- The incubation period is approximately 10 days but ranges 7-18 days from exposure to onset of symptoms.

What is the period of communicability?

- Measles is most communicable from one day before the beginning of the prodromal period (usually about four days before rash onset) to four days after rash appearance.

What if I suspect a patient has measles?

- If patient is calling your office, take an illness, exposure and vaccination history and advise the patient to stay home if you are suspicious of measles. Call telecare 811 for more information on what to do.
- If the patient is in your office, have them don a procedure/surgical mask immediately and isolate them from others in an exam room. Put on personal protective equipment, including a N95 respirator if possible, before examining the patient. It is important to keep the exam room vacant and the door closed for at least 2 hours after the suspect measles patient has left.

- You should also collect information on recent travel both domestic and international, immunization history; and any exposure history to a known case(s) or transmission setting.
- Do not refer suspect measles patients to other locations such as the ER or specimen collection sites unless you call ahead to ensure that appropriate infection control measures can be implemented.
- In this outbreak, the majority of cases of measles can be managed by self-care at home, therefore you do not need to refer every patient to other health care settings such as the ER or specimen collection clinics. If you need to have specimens collected for measles, call your regional MOH or the MOH on call to discuss alternative strategies by phoning the contact # on the Notifiable Disease and Reportable Events poster.

What other information should be collected?

- Information on recent travel both domestic and international, immunization history and any exposure history to a known cases or transmission setting should be collected.

What are the guidelines for specimen collection?

- Refer to [Measles swab and urine collection](#) on the [Measles Health Professionals Webpage](#).
- Measles virus infection can be diagnosed by identification of measles RNA (by RT-PCR) from clinical specimens, such as urine, throat or nasopharyngeal secretions; or a positive serologic test result for measles immunoglobulin (Ig) M antibody in the presence of an epidemiologic link to a confirmed case and/or travel to an endemic area.
- Confirm the diagnosis by laboratory testing after consultation with Public Health
- Specimen collection should be arranged in advance to ensure appropriate infection control precautions. Please include the date of onset of both fever and rash on the lab requisition. Contact your regional laboratory if you have any additional questions.
- Nasopharyngeal specimen/throat swab: Collect a specimen for RT-PCR viral detection within 4 days of rash onset and submit in viral transport media (UTM)
- Urine Specimen: collect 10-50 mL of urine in a sterile container within 7 days of rash onset for RT-PCR. A laboratory will need to process the sample before sending it for PCR. Unprocessed urine samples need to be kept at 4°C and sent to the laboratory within 48h of collection. Do not freeze unprocessed urine.
- Serology: Requisition should be written as serum for measles IgM/IgG serology. A positive IgM testing result is indicative of acute measles infection when rash is present and there is a history of exposure to measles through travel to an endemic area or an epidemiological link to a confirmed case. However, some acute measles cases do not develop IgM until 3 days after rash onset. If the specimen is collected prior to this, any negative test result will require a second serum collected > 3 days post rash onset for retesting for IgM.

What information is needed on infection prevention & control?

- Advise the patient to stay home until 4 days after the onset of the rash.
- If hospitalization is required call ahead to advise the hospital.
- Do not allow suspect measles patients to remain in the waiting room or common area.
- They will require airborne isolation from the onset of prodromal stage to the 4th day of rash reduces the exposure of other patients at risk.

- Airborne precautions in addition to routine practices should be followed when individuals with probable measles present to a health care setting. Refer to the following documents for more information:
 - Public Health Ontario Infection Prevention and Control for Clinical Office Practice: <https://www.publichealthontario.ca/en/health-topics/infection-prevention-control/clinical-office-practice>
 - Canadian Pediatric Society. Infectious Diseases and Immunization Committee. Infection control in pediatric office settings. *Paediatric Child Health* 2018, 23(8):e176–e190. <https://www.cps.ca/en/documents/position/infection-prevention-and-control-in-paediatric-office-settings>

If you still need information on clinical management, phone the contact # on the Notifiable Disease and Reportable Events poster which can be found on the [Measles Health Professionals Webpage](#).

Immunization

Who should receive measles, mumps, and rubella vaccine (MMR) vaccine?

- During this Measles Outbreak, the MMR vaccine is prioritized for the following individuals:
 - individuals potentially exposed to confirmed measles cases and vulnerable populations in the outbreak area.
 - health care workers (HCW) regardless of age (if they have less than 2 doses of MMR vaccine) including HCW in hospital settings, emergency response workers, others who have contact with patients potentially exposed to measles.
 - post-partum women as per hospital policy.
 - unimmunized individuals born 1970-1995 who clearly identify as having zero vaccine (this is not the same as lack of documentation).
 - individuals planning international travel including, but not limited to, Europe and the United States, born in or after 1970, who are not immune to measles.
- In New Brunswick, a combined measles, mumps and rubella vaccine is provided to children, adolescents through the New Brunswick Routine Immunization Schedule.
 - A combined MMRV vaccine is provided routinely to infants and children in a series of two doses. The first dose is usually administered at 12 months of age and the second at 18 months. Children born in 2009 and later who have not previously received 2 doses of measles, mumps, rubella (MMR) and 2 doses of Varicella vaccine are eligible to receive 2 doses of MMRV vaccine.

Note: MMRV product is only licensed from 12 months of age up to 12 years of age. Individuals older than 12 years of age should receive MMR not MMRV.
- **NOTE:** Individuals born between 1970 and 1995 with no direct contact to the measles case or do not meet the definition of a vulnerable contact during this outbreak are not being prioritized AT THIS TIME.(i.e. people who have one dose of MMR or lack documentation but are likely to have been vaccinated as children.)

If a child develops a rash after getting the MMR/MMRV vaccine, is he contagious?

- Transmission of the vaccine viruses does not occur from a vaccinated person, including those who develop a rash. No special precautions (e.g., exclusion from school or work) need be taken.
- After a measles containing vaccine, fever and/or rash can occur 6-23 days later 5-10% of the time.
- No testing for measles needs to be done if there is no other reason to suspect natural measles infection i.e no exposure to a measles case or travel.

Who does not require MMR vaccine?

- Individuals born before 1970 who are not Health Care Workers
- Individuals born before 1970 who are not travelling internationally.
- Individuals with documented evidence of vaccination with two doses of measles containing vaccine after their first birthday.
- Individuals with laboratory evidence of immunity (IgG) or a history of laboratory confirmed measles disease (IgM).

Can someone who is born before 1970 and believes that they never had measles receive the vaccine?

- Adults born before 1970 can generally be presumed to have acquired natural immunity to measles. However, international travelers born before 1970 should make sure that they have received one dose of the MMR vaccine before departure.
- Susceptible health care workers born before 1970 are eligible to receive MMR vaccine, regardless of year of birth and should check with their Employee Health.

Should a baby receive MMR vaccine before the routine recommended age (12 or 18 months)?

- In an area where there is a measles outbreak (i.e. confirmed cases in Saint John area), susceptible individuals 6 months of age and older may receive MMR vaccine.
- However, if MMR is given between 6 months and less than 12 months of age, 2 additional doses of measles-containing vaccine must be administered after the child is 12 months old (and at least 4 weeks after the previous dose) to ensure long lasting immunity to measles.

How can individuals obtain information on their immunization records?

- Individuals can obtain information on their immunization records by contacting their health care provider that administered the vaccine. This may be their family doctor, nurse practitioner, public health office or pharmacist.
- Individuals between 25-36 years of age may have received a 2nd dose of MMR vaccine during Public Health catch-up campaigns even if they do not have a record. To obtain this immunization record, contact the local Public Health office.

Should serology testing be routinely performed?

- Serologic testing is not routinely recommended before or after receiving measles-containing vaccine. However, testing may be performed for health care workers and other persons at greatest risk of exposure to measles in consultation with Public Health.
- Routine serologic testing to determine the immunity of children and adults without immunization records is generally not practical.

Should women delay becoming pregnant after receiving MMR vaccination?

- Women should delay pregnancy for 4 weeks after vaccination with MMR.

During pregnancy should women receive MMR?

- No, however susceptible women should be offered MMR vaccine post-partum and susceptible contacts may be considered for post-exposure prophylaxis recommendations [NACI Recommendations for PEP, September 2018](#)

Can a breastfeeding woman receive MMR?

- Susceptible breastfeeding women should receive the MMR vaccine.