

## Measles –Testing, Immunization Recommendations, and Epidemiology

**Attention:** All Physicians, Walk-In Clinics, Emergency Departments, Infection Control Practitioners, Occupational Health Practitioners, Family Health Teams, Nurse Practitioners, NSM LHIN, Central LHIN, Midwives, Long-Term Care Homes, Retirement Homes

**Date:** February 9, 2015

---

So far in 2015, provincially there have been six confirmed measles cases in Toronto and one in Niagara Region. There are no known epidemiological links between cases and no identified sources for any of the cases.

There is also considerable measles activity occurring in the United States (U.S.). Since the end of December 2014, 121 individuals from 14 States were reported to have measles, with most of those cases being part of a large outbreak linked to Disneyland or Disney Adventure Park in California. The majority of the cases were unvaccinated. Although to date Canada has not experienced measles cases directly related to the U.S. outbreak, the risk of measles importation due to travel remains a concern. For further information about national and international measles activity, the Public Health Agency of Canada's Travel Health Notice on measles is available at:

<http://www.phac-aspc.gc.ca/tmp-pmv/notices-avis/notices-avis-eng.php?id=98>.

### Measles immunization recommendations

- Everyone born in 1970 or after is recommended to have two measles immunizations at least four weeks apart, with the first one given at one year of age at the earliest.
- Adults born before 1970 are generally presumed to be immune due to previous infection. For those not known to be immune and traveling outside of North America or to areas where measles is a concern, one dose of MMR (Measles-Mumps-Rubella) is recommended.
- Infants may receive MMR immunization as early as six months of age prior to travel based on the clinical judgment of the health care provider and the needs of the child. Note that, if the first dose of MMR is given at less than 12 months of age, two additional doses of measles containing vaccine must be administered after the child is one year of age to ensure long lasting immunity.
- Health care workers and military personnel, regardless of when they were born are recommended to have two measles immunizations or proof of immunity.
- Measles immunization is not recommended for immunocompromised patients or pregnant women.

### Routine childhood measles immunization

- Continue to follow the Ontario immunization schedule: MMR at 12 months of age and then Measles-Mumps-Rubella-Varicella (MMRV) between four and six years of age.

### Minimum interval between measles immunizations

- Between two MMR immunizations is four weeks
- Between the first MMR and then MMRV is six weeks.
- Between two MMRV immunizations is six weeks, but preferably three months.

### Measles immunization effectiveness

- A single dose of measles-containing immunization is 85 to 95% effective.
- Two doses in children provides close to 100% effectiveness.
- Herd immunity is developed when the measles immunization coverage is at least 95%. The coverage in Simcoe Muskoka is estimated to be 85%.

## Consider the following when you suspect measles:

1) Clinical assessment: Does your patient have all of the following?

- Fever  $\geq 38.3$  °C (oral); AND
- Cough, runny nose or conjunctivitis; AND
- Generalized maculopapular rash

2) Exposure assessment:

- Has your patient travelled to a measles-endemic country or been in contact with a measles case in the last 21 days?

3) Measles Testing:

Please complete **both** measles virus detection and serology.

a) Measles Virus Detection by PCR:

- Urine – 50 mls within 14 days after rash onset
- NP/viral throat swab - within four to seven days of rash onset

AND

b) Serology (insufficient for diagnostic purposes without the PCR testing):

- Acute serology (IgM and IgG) within seven days of rash onset
- Convalescent serology - 7-10 days after the onset of rash (minimum of five days after the acute sample)

Mark "suspect measles" on the Public Health Ontario Lab requisition and include symptoms, date of onset, travel/exposure history and vaccination status.

**The period of contagiousness is usually one day before the start of the prodromal period, which is usually four days before the rash onset to four days after the onset of rash.**

Further information on clinical features of measles, laboratory testing and Infection Prevention and Control practices are available on the Public Health Ontario Website:

[http://www.publichealthontario.ca/en/eRepository/Measles\\_Update\\_for\\_Clinicians\\_February\\_3\\_2015.pdf](http://www.publichealthontario.ca/en/eRepository/Measles_Update_for_Clinicians_February_3_2015.pdf)

### 4) Infection Prevention and Control:

- Instruct suspect cases to remain in isolation until contacted by local Public Health
- Patients with suspected measles should be promptly isolated in a single room preferably with negative air flow (airborne isolation room) and the door closed. If you do not have an airborne isolation room, the patient should wear a surgical mask and be immediately placed in a single room with the door closed. Because measles virus can remain airborne for two hours, no further patients should be placed within the room for a two hour period and appropriate room cleaning is also required. Patient movement should be curtailed unless absolutely necessary and then only conducted with the patient wearing a mask.
- Suspect cases should be cared for by health care workers (HCW's) wearing full personal protective equipment, including an N95 mask (preferably fit-tested). All healthcare providers should also ensure they are immune to measles.
- Evidence of immunity is two documented doses of measles-containing vaccine or laboratory evidence of immunity.
- Please refer to the PIDAC document on routine practices and additional precautions for further guidance: [http://www.publichealthontario.ca/en/eRepository/RPAP\\_All\\_HealthCare\\_Settings\\_Eng2012.pdf](http://www.publichealthontario.ca/en/eRepository/RPAP_All_HealthCare_Settings_Eng2012.pdf)

**Measles is a reportable disease. If you suspect a case of measles or have questions regarding proper specimen collection, please contact the Simcoe Muskoka District Health Unit Communicable Disease Team immediately at 705-721-7520 x8809 (8:30 a.m.–4:30 p.m.) or 1-888-225-7851 (4:30 p.m. – 8:30 a.m.).**