MEASLES

NOVA SCOTIA

Case Definition

Confirmed Case:

Laboratory confirmation of infection in the absence of recent (previous 28 days) immunization with measles-containing vaccine:

- Isolation of measles virus from an appropriate clinical specimen.
  OR
- Detection of measles virus RNA.
  OR
- Seroconversion or a significant (e.g. fourfold or greater) rise in measles IgG titre by any standard serologic assay between acute and convalescent sera.
  OR
- Positive serologic test for measles IgM antibody using a recommended assay in a person who is either epidemiologically linked[2] to a laboratory-confirmed case or has recently traveled to an area of known measles activity.
  OR
- Clinical illness[1] in a person with an epidemiologic link[2] to a laboratory-confirmed case.

Probable Case:

Clinical illness[1] in the absence of recent (previous 28 days) immunization with measles-containing vaccine

AND:

- A positive serologic test for measles IgM antibody using a recommended assay in a person who is not epidemiologically linked to a laboratory-confirmed case or has not recently traveled to an area of known measles activity.
  OR
- In a person who has recently travelled to an area of known measles activity and without an epidemiologic link[2] to a laboratory-confirmed case.

Clinical Evidence

Clinical illness is characterized by **all** of the following features:

- Fever of 38.3°C or greater; AND
- Cough, coryza or conjunctivitis; AND
- Generalized maculopapular rash for at least 3 days.

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[1] See Clinical Evidence section.

[2] A case has an epidemiological linkage if one or more of the following criteria are met:

• Contact with a confirmed measles case

• Travel during the 21 days prior to onset of rash to a geographic area where measles is endemic or an outbreak of measles is occurring

• Belonging to a defined risk group during an outbreak

Laboratory Comments

Molecular detection of measles RNA is the best test to diagnose acute infection. Nasopharyngeal swab (NPS) (preferred) or throat swab in universal transport medium and a urine (at least 5ml) should be sent in a dry sterile container for PCR as soon as the diagnosis of measles is being considered. In addition, after the rash has appeared for 7 days, serology can also be used for diagnosis. However, serology should not be used as the only test for measles diagnosis in most scenarios. IgM serology has the potential for false-positive results. If the clinical presentation is inconsistent with a diagnosis of measles or in the absence of recent travel/exposure history, IgM results must be confirmed by the other listed confirmatory methods.

Most acute measles cases develop IgM after 3 days post rash onset. If the case has serum collected less than 3 days after rash onset it may test IgM negative. NPS/throat and urine specimens for PCR and a repeat serology test should be performed after the rash has been present for 3 days.

Further strain characterization may be used for epidemiologic, public health and control purposes.

Reporting Requirements

- Report confirmed cases **immediately** to DHW Surveillance Team via Panorama and the Surveillance Inbox.

Additional Forms

None.

Data Entry

Complete data entry in Panorama.

Outbreak Definitions

As measles has been eliminated in Canada, a single case would be considered unusual or unexpected. The following provides working definitions for identifying a measles outbreak:

- One confirmed case of measles with no travel history (i.e., locally acquired).
- Two or more confirmed cases linked, either epidemiologically or virologically, regardless of travel history.[3]

For additional information, see PHAC's Guidelines for measles outbreak in Canada.

Suspect Case (Outbreak Only):

Regardless of recent (previous 28 days) immunization, clinical illness[1] in a person with a maculopapular rash of any duration, who does not meet the confirmed or probable case definition, and where the clinician has a high index of suspicion of measles.

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[1] See Clinical Evidence section.
[3] Multiple cases associated with unrelated travel history are not considered an outbreak.