



## GUIDANCE FOR MEASLES LABORATORY TESTING

Measles is a highly contagious acute febrile rash illness caused by measles virus that is a RNA virus. Measles is characterized by a generalized maculopapular rash after a prodrome of fever, malaise, cough, coryza and conjunctivitis. The rash usually appears about 14 days after a person is exposed. It typically begins on the face, advances to the trunk and then to the arms and legs. The rash lasts 4 to 7 days. Patients are considered to be contagious from 4 days before to 4 days after the rash appears.

Healthcare providers should consider measles as differential diagnosis in patients presenting with febrile rash illness and clinically compatible symptoms, especially if the person recently traveled internationally or was exposed to someone with febrile rash illness. Measles is diagnosed using the **measles-specific testing** by using PCR detection of measles virus RNA and/or serology testing of anti-measles antibodies.

### Measles-Specific Testing:

Test Request	Sample Type	Collection Kit	Store and Shipping Condition
Measles qRT-PCR*	Nasopharyngeal or throat swab** (within 7 days of rash appearance)	AllTM or VTM or UTM	This is a send-out to the national microbiology laboratory (NML).  Immediately after collection, store the swabs @ 2-8°C and ship on ice pack for arrival at the lab within 48 hours from collection. Otherwise, freeze at -20°C or lower and ship frozen on dry ice.
	Urine (within 14 days of rash appearance)	Sterile, leak-proof container (10-50 ml)	This is a send-out to the national microbiology laboratory (NML) after sample is processed at the PHML.  Store at 4°C and ship on ice pack. Do not freeze urine.
Measles IgG and IgM***	Serum (>3 days after rash appearance)	SST (red-top tube)	This is performed at the PHML.  Store @4°C and ship on ice pack for arrival at the PHML within 3 days of collection. Otherwise, freeze (-20°C or below) and ship frozen on dry ice.

\* Nasopharyngeal or throat swabs are preferred over urine specimens.

\*\* Detection of measles RNA is most sensitive when specimens are collected on the first to three days of rash appearance. Detection of measles RNA may be successful as late as 10-14 days after rash onset. Collection of both a respiratory (NP or throat swab) and urine sample increases the likelihood of detecting the viral RNA.

\*\*\* If the acute blood sample within 7 days of rash onset shows low reactive, indeterminate or non-reactive IgG and/or IgM results, a convalescent sample (7-10 days after the acute) should be collected.