

**Date:** December 8, 2010

**To:** Alberta Health and Wellness, Alberta Micronet, CDC Nurses, Infection Prevention and Control, Laboratory Directors and Managers, Medical Officers of Health, Transplant Services and All Physicians

**From:** ProvLab

**Re:** Measles Molecular (PCR) Testing

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**Background:**

Measles is a highly infectious disease, transmitted by aerosol, droplet and contact routes. Despite high levels of vaccination, sporadic cases and outbreaks have been recently documented in Alberta. Measles is a notifiable disease and all suspected cases **must be reported** to the zone Medical Officer of Health, **who will arrange for STAT testing**, if required.

Viral shedding commences in the prodrome phase and continues for at least four days after the appearance of the rash. Measles IgM antibody will be positive in most cases at five days after the rash onset, although in some, as early as after three days. Individuals who received a single dose of a measles-containing vaccine or have waning immunity, can show a variable serological response. An atypical clinical presentation can occur in vaccinated persons or those with prior exposure.

**Measles clinical illness**<sup>1</sup> is characterized by ALL of the following features:

- Fever 38.3° C or higher
- Cough, coryza OR conjunctivitis
- Generalized maculopapular rash for at least 3 days

**Note: do not wait for a 3 day rash history to report suspected cases of measles to the zone Medical Officer of Health**

<sup>1</sup>Alberta Health and Wellness Public Health Notifiable Disease Management Guidelines *Measles* July 2008

**Infection Control Measures:** As measles is highly infectious, contact your zone Medical Officer of Health and blood collection site on all suspect cases **before** sending the patient to have their blood drawn.

**Laboratory Testing:**

To maximize the sensitivity of the laboratory diagnosis from a suspected case of measles in the acute phase of illness (from rash onset to 4 days later), it is **strongly recommended** that **ALL** of the following samples are collected: nasopharyngeal swab, urine and serum.

**Molecular (PCR) Testing:** (Specimens can be collected anytime in the period from rash onset to 4 days later)

- Nasopharyngeal swab in Universal Transport medium (UTM) (*Throat or nasal swabs are unacceptable*)
- AND**
- Urine (10-20 mL) in a sterile container
  - Request **Measles PCR** testing on the ProvLab requisition

**Serological Testing:**

- Collect one 5 mL serum vacutainer (SST gold top) for each acute and convalescent blood.
- **Acute blood:** request "Measles IgM serology" on the ProvLab requisition, as IgG antibody will be performed automatically.
- **Convalescent blood:** may be required if the acute serum result is IgM negative and measles is still strongly suspected (often at early appearance of rash when IgM antibody levels can be low or absent).  
The convalescent blood should be collected 7 to 10 days after the acute sample. On the requisition specify that the follow-up blood is for "convalescent measles serology".

**Clinical Information Required:** on the ProvLab Requisition

- Vaccination status, i.e., none, one or two doses of measles-containing vaccine and when administered
- Clinical history, including recent travel within the past 3 weeks

**Questions:**

Edmonton Site – Ph: 780-407-7121 (ask for Virologist-on-Call)

Calgary Site – Ph: 403-944-1200 (ask for Virologist-on-Call)

For more detailed information on measles testing, e.g. sample collection, transport, result interpretation, see the bulletin "[Laboratory Testing for Measles](#)" at [www.provlab.ab.ca/partner\\_updates.htm](http://www.provlab.ab.ca/partner_updates.htm) or the Guide to Services at <http://www.provlab.ab.ca/guide-to-services.pdf>