**NCSLPH Measles Specimen Collection and Testing Guidelines, 1/30/2015 3:30 PM**

**Testing Criteria for Measles:** All suspect or probable cases of measles must be reported to the Communicable Disease Branch at (919) 733-3419 for prior approval for laboratory testing. Individuals presenting with fever, cough, coryza and/or conjunctivitis, and a rash are considered suspect cases.

**Testing Systems Employed:** Serological specimens will be evaluated at the NCSLPH using an Indirect Immunofluorescent Antibody (IFA) test to detect IgM and IgG antibody. **IgM and IgG IFA is the preferred test.** Nasopharyngeal (NP) swabs, throat swabs, and urine will be processed for viral isolation (NCSLPH) and if indicated, PCR analysis (CDC VPD Project).

**SPECIMENS SHOULD BE COLLECTED AT THE FIRST CONTACT WITH A SUSPECTED CASE**

<table>
<thead>
<tr>
<th>Specimen</th>
<th>Test</th>
<th>Specimen Volume</th>
<th>Shipment</th>
<th>Expected TAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum*</td>
<td>IgM and IgG IFA, preferred</td>
<td>1 – 3 mls</td>
<td>Refrigerated (4°), place on cold packs</td>
<td>1 – 2 days</td>
</tr>
<tr>
<td>Urine</td>
<td>Viral Culture**</td>
<td>15 mls (20 – 35 mls preferred)</td>
<td>Refrigerated (4°), place on cold packs</td>
<td>Culture: 1 – 2 weeks PCR: 3 – 6 days</td>
</tr>
<tr>
<td>NP or Throat Swab</td>
<td>Viral Culture**</td>
<td>2mls VTM</td>
<td>Refrigerated (4°), place on cold packs</td>
<td>Culture: 1 – 2 weeks PCR: 3 – 6 days</td>
</tr>
<tr>
<td>Urine</td>
<td>PCR</td>
<td>15 mls</td>
<td>Refrigerated (4°), place on cold packs</td>
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</tr>
</tbody>
</table>

*Note: Optimal collection for this specimen type is ≥3 days post-onset of rash. Collection prior to this time may result in a false negative test due to the lack of detectable levels of IgM and IgG immunoglobulin.

**Note:** Measles virus isolation is most successful when samples are collected on the first day of rash through 3 days following onset of rash; however, it is possible to detect virus up to day 7 following rash onset.

**SPECIMEN COLLECTION AND STORAGE**

- Collection instructions for viral culture:
  - **Nasopharyngeal Swab** – Carefully swab the posterior nasopharyngeal area via the external nares with a dry sterile tipped swab. Break off the swab tip into a vial containing 2 ml of viral transport medium. Screw the cap on tightly.
  - **Throat Swab** – Vigorously rub the posterior wall of the pharynx with a dry, sterile, swab. The swab should not touch the tongue or buccal mucosa. Break off the swab tip into a vial of viral transport medium. Screw the cap on tightly.
  - **Urine** – Collect clean voided urine. Transfer to a plastic shipping tube.

- All specimen types should be refrigerated promptly after collection. Temporary storage and transport temperature should be 4° - 8°C. DO NOT FREEZE.

- Clearly label each specimen with patient's first and last name, either date of birth, SSN, or other unique identifier, specimen source, and collection date.

- Complete the appropriate specimen submission forms and request Measles testing only during times of active Measles surveillance:
  - Serological specimens: DHHS# 3445, found at http://slph.ncpublichealth.com/Forms/DHHS-3445-SpecialSerology-20130809.pdf
    Include the statement: “Prior approval/consultation received from:” the name of the individual in the Communicable Disease Branch that provided approval for testing.
  - Do not use calcium alginate tipped OR wooden shafted swabs. Calcium alginate may inactivate some viruses. Wooden shafts may be toxic to viruses.

**SHIPPING OF DIAGNOSTIC SPECIMENS (PLEASE NOTE THE CHANGE OF ADDRESS)**

- Ship specimen(s) to the State Laboratory the same day collected.
- Wrap the properly labeled inoculated transport medium (primary container) or serological specimen in absorbent material, i.e. paper towel, and place into a leak proof secondary container (50ml conical tubes).
- Place two frozen ice packs in the shipping container.
- Place secondary container(s) containing specimen(s) between the ice packs.
- Place completed forms in plastic bag and slide into space at narrow end of ice pack.
- Ship specimen(s) to:
  - Attention: Virology/Serology
  - North Carolina State Laboratory of Public Health
  - 4312 District Drive
  - Raleigh, NC 27607-5490

- Ship specimens by the fastest means possible. Transit time of less than 24 hours will optimize virus detection.

Please contact Myra Brinson (919-807-8835) or Joey Johnson (919-807-8821) at the NCSLPH if you have questions regarding sample collection or shipment.