



NC DEPARTMENT OF
**HEALTH AND
HUMAN SERVICES**
Division of Public Health

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NCSLPH Measles Specimen Collection and Testing Guidelines, 6/19/2019

Testing Criteria for Measles: All suspected or probable cases of measles must be reported to the **Communicable Disease Branch at (919) 733-3419 for prior consultation and approval for laboratory testing.** Individuals presenting with fever, cough, coryza and/or conjunctivitis, and a rash are considered suspect cases. Testing is reserved for persons who are likely to have measles. Measles should be considered in persons with fever, cough, runny nose, conjunctivitis, and generalized maculopapular rash. Patient information on immunization status and travel history should also be obtained.

Testing Systems Employed: Serological specimens will be evaluated at the NCSLPH using an Indirect Immunofluorescent Antibody (IFA) test to detect measles-specific IgM and IgG antibody. Nasopharyngeal (NP) swabs, throat swabs, and urine will be processed for viral isolation and PCR testing at the NCSLPH (swabs) or APHL/CDC VPD Reference Center (urine).

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

Specimens are listed in order of preference. NP or throat swabs are the preferred specimen source. Urine **must** be accompanied by a paired NP or throat swab.

Specimen	Test	Specimen Volume	Shipment	Expected TAT
NP or Throat Swab	PCR Viral Culture	2ml VTM	Refrigerated (4°), place on cold packs	PCR: 1-2 days Culture: 1 - 2 weeks
Urine [#]	PCR Viral Culture	15 ml (20–35 ml preferred)	Refrigerated (4°), place on cold packs	PCR: 3 days [#] Culture: 1 - 2 weeks
Serum	IgM and IgG IFA	1 – 3 ml	Refrigerated (4°), place on cold packs	1 – 2 days

NC DEPARTMENT OF HEALTH AND HUMAN SERVICES • DIVISION OF PUBLIC HEALTH • STATE LABORATORY OF PUBLIC HEALTH

LOCATION: 4312 District Drive, Raleigh, NC 27607

MAILING ADDRESS: 1918 Mail Service Center, Raleigh, NC 27699-1918

www.ncdhhs.gov • <http://publichealth.nc.gov> • slph.ncpublichealth.com • TEL: 919-733-7834 • FAX: 919-733-8695

AN EQUAL OPPORTUNITY / AFFIRMATIVE ACTION EMPLOYER

Urine PCR specimen testing is performed at our APHL/CDC Vaccine Preventable Diseases Reference Center.

Testing Frequency: PCR samples that are received before 2:30 pm and serological samples received before 12:00 pm and will be processed and tested the same day.

SPECIMEN COLLECTION AND STORAGE

- Specimens for PCR and 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.
- **NOTE:** Swabs must be synthetic (Dacron, Nylon, Polyester) with a non-wooden shaft. Swabs may be flocked. Do not use calcium alginate tipped OR wooden shafted swabs. Calcium alginate may inactivate some viruses. Wooden shafts may be toxic to viruses.
- Urine: Collect clean voided urine. Transfer to a plastic shipping tube.
- **Swabs and Urine:** Measles virus isolation and RNA detection (through PCR testing) is most successful when samples are collected on the first day of rash through 3 days following onset of rash onset; however, it is possible to detect virus up to day 7 following rash onset.
- Specimens for serology:
 - Serum: Submit 2-3 mL of serum in a plastic screw-capped vial. Hemolyzed, icteric, or lipemic serum are unacceptable,
- Optimal collection for this serum 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.
- All specimen types should be refrigerated promptly after collection. Temporary storage and transport temperature should be 4° - 8°C. If samples cannot be shipped immediately, samples may be frozen at -70 and shipped on dry ice.
- Clearly label each primary specimen container with patient's first and last name, either date of birth, SSN, or other unique identifier, specimen source, and collection date, which match information provided on the requisition form.

TEST REQUISITION FORMS

- After testing is approved by the Communicable Disease Branch, complete the appropriate specimen submission forms and request Measles testing.
 - Serological specimens (IgM and IgG): DHHS# 3445, found at <https://slph.ncpublichealth.com/Forms/SpecialSerologyForm-3445.pdf> Include the statement: "Prior approval/consultation received from:" the name of the individual in the Communicable Disease Branch that provided approval for testing.
 - Swabs and urine for culture or PCR: DHHS# 3431, found at

<https://slph.ncpublichealth.com/Forms/3431-VirologyFinal-20170711.pdf>

- Please ensure all fields of the requisition forms are complete, and that two of the identifiers match the labels on the primary specimen container.
- If sending samples for both serology and PCR, both forms must accompany samples.

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

- Ship specimen(s) cold to the State Laboratory the same day collected, using the fastest means possible.
- 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 specimens to:

Attention:

Virology/Serology

North Carolina State Laboratory of Public Health

4312 District Drive

Raleigh, NC 27607-5490

Please contact John Bunting (919-807-8824) or Segun Awe (919-807-8821) at the NCSLPH if you have questions regarding sample collection or shipment.