**North Carolina Department of Health and Human Services**  
**State Laboratory of Public Health**

| Pat McCrory | Aldona Z. Wos, M.D. |  
| Governor | Ambassador (Ret.) |  
|  | Secretary DHHS |  
| Scott J. Zimmerman, DrPH, MPH, HCLD (ABB) | Laboratory Director |  

**NCSLPH MERS-CoV Specimen Collection and Testing Guidelines, 7/22/14**

**Testing Criteria for Middle East Respiratory Syndrome Coronavirus (MERS-CoV):** All suspect or probable cases of MERS-CoV infections should be reported to the NC DPH Communicable Disease Branch at (919) 733-3419 for prior approval for laboratory testing. A Patient Under Investigation (PUI) is a person with:

**A.** Fever ($\geq 38^\circ C, 100.4^\circ F$) and pneumonia or acute respiratory distress syndrome (based on clinical or radiological evidence) AND EITHER:

- History of travel from countries in or near the Arabian Peninsula within 14 days before symptom onset; OR
- Close contact with a symptomatic traveler who developed fever and acute respiratory illness (not necessarily pneumonia) within 14 days after traveling from countries in or near the Arabian Peninsula; OR
- Is a member of a cluster of patients with severe acute respiratory illness (e.g. fever and pneumonia requiring hospitalization) of unknown etiology in which MERS-CoV is being evaluated, in consultation with state and local health departments.

**OR**

**B.** Fever AND symptoms of respiratory illness (not necessarily pneumonia; e.g. cough, shortness of breath) AND being in a healthcare facility (as a patient, worker, or visitor) within 14 days before symptom onset in a country or territory in or near the Arabian Peninsula in which recent healthcare-associated cases of MERS have been identified.

**Testing Employed:** The NCSLPH has implemented the CDC MERS-CoV rRT-PCR assay that has been granted FDA Emergency Use Authorization. Specimens testing presumptive positive with this assay will be forwarded to the CDC for confirmation. The estimated turn-around-time for negative and presumptive positive results is 5 – 48 hrs.

**USE APPROPRIATE PRECAUTIONS (link below) WHEN COLLECTING SPECIMENS FOR MERS-CoV TESTING**


| **Appropriate Specimens for MERS-CoV rRT-PCR Testing at NCSLPH** |  
| Specimen | Optimal Collection Time | Specimen Volume | Shipment |  
| Lower Respiratory (preferred specimen): Bronchoalveolar lavage and/or sputum (patient should rinse mouth with H2O prior to collection) | Respiratory specimens should be collected as soon as possible after symptoms begin and before antiviral medication. | 2–3 mL fluid contained in a sterile leak-proof cup | Refrigerated (4°C), placed on cold packs if shipment is to be received within 72 h of collection. For delays exceeding 72 h, freeze at -70°C & ship on dry ice. |  
| Upper Respiratory: NP and OP swabs (synthetic tip with plastic shaft recommended) in viral transport media or NP wash/aspirate or nasal aspirates | | |  
| Serum | Optimally during 1st week post-onset, preferably within 3-4 days | Adults: 3–5 mL  
Infants: 0.5–1 mL |  
|  
**Appropriate Specimens for MERS-CoV Testing Conducted at the CDC** |  
| Specimen | Optimal Collection Time | Specimen Volume | See above |  
| Serum (research/surveillance purposes, not diagnostic) | Acute: 1-14 days post onset and Convalescent: $\geq 3$ wks post-acute | Adults: 3–5 mL  
Infants: 0.5-1 mL |  
| Stool – formed or liquid | Currently not determined | 2–5 grams |  

All specimen submissions must have a completed BTEP Specimen Submission Form found at: [http://slph.ncpublichealth.com/Forms/DHHS-5010-BTEmergingPathogens-0313.pdf](http://slph.ncpublichealth.com/Forms/DHHS-5010-BTEmergingPathogens-0313.pdf)

**CONTACT THE BTEP UNIT (919-807-8600) PRIOR TO ANY SHIPMENT OR IF YOU HAVE QUESTIONS.**

Address all specimen shipments as follows:

Attention: Bioterrorism & Emerging Pathogens Unit (BTEP)  
North Carolina State Laboratory of Public Health  
4312 District Drive  
Raleigh, NC 27607-5490

**Additional Information:**

- NC Division of Public Health Epidemiology Section Information: [http://epi.publichealth.nc.gov/cd/diseases/merscov.html](http://epi.publichealth.nc.gov/cd/diseases/merscov.html)


Location: 4312 District Drive • Raleigh, NC 27607 • Tel 919-733-7834 • Fax 919-733-8695  
Mailing Address: 1918 Mail Service Center • PO Box 28047, Raleigh, NC 27611-8047  
An Equal Opportunity / Affirmative Action Employer