North Carolina Department of Health and Human Services
Division of Public Health

Pat McCrory
Governor

Aldona Z. Wos, M.D.
Ambassador (Ret.)
Secretary DHHS

Penelope Slade-Sawyer
Division Director

May 15, 2014 – *Replaces version posted April 22, 2014*

To: All North Carolina Health Care Providers
From: Megan Davies, MD, State Epidemiologist MD
Re: **Middle-East Respiratory Syndrome Coronavirus (MERS-CoV)** ***(2 pages)***

This memo is intended to provide information to all North Carolina clinicians regarding a novel coronavirus known as the Middle-East Respiratory Syndrome Coronavirus or MERS-CoV.

This version has been modified to include a recommendation to consider MERS in patients who develop mild symptoms after close contact with a confirmed or probable case of MERS and information regarding confirmation of MERS cases in the United States.

Summary
MERS-CoV is a novel coronavirus that was first identified in September of 2012 and has been associated with severe respiratory infections among persons who live in or have traveled to the Middle East and persons (including health care providers) exposed to MERS cases outside of the Middle East. The first travel-associated cases in the United States were confirmed in May, 2014. There has been clear evidence of person-to-person transmission both in household and healthcare settings, but no evidence of sustained person-to-person transmission in the community.

Case Investigation and Testing

- MERS-CoV infection should be considered in any patient who meets the following criteria:

    A. Fever (≥38°C, 100.4°F) and pneumonia or acute respiratory distress syndrome (based on clinical or radiological evidence) AND EITHER:
        - a history of travel from countries in or near the Arabian Peninsula[1] within 14 days before symptom onset, OR
        - close contact[2] 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[1] OR
        - 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. Close contact[2] with a confirmed or probable case of MERS while the case was ill AND

        - fever (>100°F) or symptoms of respiratory illness within 14 days following the close contact. (This is a lower threshold than category A.)

- **Clinicians caring for patients meeting these criteria should immediately contact their local health department or the state Communicable Disease Branch (919-733-3419; available 24/7) to discuss laboratory testing and control measures.**

- Persons who meet these criteria should also be evaluated for common causes of community-acquired pneumonia, if this has not been already done. Examples of respiratory pathogens causing community-acquired pneumonia include influenza A and B, respiratory syncytial virus, *Streptococcus pneumoniae*, and *Legionella pneumophila*. (Note: Viral culture should not be attempted in cases with a high index of suspicion.) MERS-CoV infection should still be considered even if another pathogen is identified, since co-infections have been reported.

- Any clusters of severe acute respiratory illness in healthcare workers in the United States should be thoroughly investigated. Occurrence of a severe acute respiratory illness cluster of unknown etiology should prompt immediate notification of local public health for further notification and testing.

- Testing for MERS-CoV is available at the North Carolina State Laboratory of Public Health. Testing requires consultation and pre-approval from the state Communicable Disease Branch. Detailed information about specimen collection and transport is available at http://slph.ncpublichealth.com/doc/NCSLPH-MERS-CoV-Guidelines.pdf.

Infection Control

- Transmission of MERS-CoV has been documented in healthcare settings.

- Until the transmission characteristics are better understood, patients under investigation and probable and confirmed cases should be managed according to CDC's infection control recommendations, available at http://www.cdc.gov/coronavirus/mers/infection-prevention-control.html. These include:

    - Contact and airborne isolation precautions for all patient contact, including:
        - Use of fit-tested NIOSH-approved N95 or higher level respirators
        - Use of gowns, gloves and eye protection
        - Use of negative-pressure airborne infection isolation rooms if available

    - A facemask should be placed on the patient if an airborne infection isolation room is not available or if the patient must be moved from his/her room.

Treatment

- No antivirals are currently available for treatment of MERS-CoV or other novel coronavirus infections.

This is an evolving situation and recommendations are likely to change as new information becomes available. Updated information and guidance are available from the CDC at http://www.cdc.gov/coronavirus/mers/index.html.

[1] Countries considered in the Arabian Peninsula and neighboring include: Bahrain, Iraq, Iran, Israel, Jordan, Kuwait, Lebanon, Oman, Palestinian territories, Qatar, Saudi Arabia, Syria, the United Arab Emirates (UAE), and Yemen.

[2] Close contact is defined as a) any person who provided care for the patient, including a healthcare worker or family member, or had similarly close physical contact; or b) any person who stayed at the same place (e.g. lived with, visited) as the patient while the patient was ill.