Health Advisory:

Updated Guidelines for Evaluation of Severe Respiratory Illness Associated with MERS-CoV

June 10, 2013

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Health Advisory
June 10, 2013

FROM: GAIL VASTERLING
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SUBJECT: **Updated Guidelines for Evaluation of Severe Respiratory Illness Associated with MERS-CoV**

On March 8, 2013, the Centers for Disease Control and Prevention (CDC) issued, and the Missouri Department of Health and Senior Services (DHSS) forwarded, a CDC Health Advisory entitled "Notice to Health Care Providers: Updated Guidelines for Evaluation of Severe Respiratory Illness Associated with a Novel Coronavirus." On June 7, 2013, CDC provided updated epidemiological information on, and evaluation guidelines for, what is now called Middle East Respiratory Syndrome Coronavirus (MERS-CoV). This Health Advisory contains the new information and guidelines from CDC. If a patient meets the criteria described below, DHSS should immediately be contacted regarding specimen submission and facilitation of testing.

CDC HEALTH UPDATE

Distributed via the CDC Health Alert Network
June 7, 2013
CDCHAN-00348

Notice to Health Care Providers: Updated Guidelines for Evaluation of Severe Respiratory Illness Associated with Middle East Respiratory Syndrome Coronavirus (MERS-CoV)

Summary: *The Centers for Disease Control and Prevention (CDC) is working closely with the World Health Organization (WHO) and other partners to better understand the public health risk posed by Middle East Respiratory Syndrome Coronavirus (MERS-CoV), a novel coronavirus that was first reported to cause human infection in September 2012. No cases have been reported in the United States. The purpose of this HAN Advisory is to provide updated guidance to state health departments and health care providers in the evaluation of patients for MERS-CoV infection including expansion of availability of laboratory testing and, in consultation with WHO, expansion of the travel history criteria for patients under investigation* from *within 10 to 14 days for investigation and modification of the case definition. Please disseminate this information to infectious diseases specialists, intensive care physicians, internists, infection preventionists, as well as to emergency departments and microbiology laboratories.*

Background

MERS-CoV, formerly called "novel coronavirus," is a beta coronavirus that was first described in September 2012, when it was reported to have caused fatal acute lower respiratory illness in a man in Saudi Arabia. Genetic sequence analyses have shown that this new virus is different from other known human coronaviruses, including the one that caused severe acute respiratory syndrome (SARS). Diagnosis relies on testing with real time reverse transcription polymerase chain reaction (RT-PCR) assays. There is no specific treatment for MERS-CoV infection; care is supportive.

As of June 7, 2013, 55 laboratory-confirmed cases of MERS-CoV infection have been reported to WHO—two from France, three from Italy, two from Jordan, two from Qatar, 40 from Saudi Arabia, two from Tunisia, one from the United Arab Emirates, and three from the United Kingdom (UK). Additional details can be found in the June 7, 2013 *MMWR* Early Release (http://www.cdc.gov/mmwr/preview/mmwrhtml/mm62e0607a1.htm?s_cid=mm62e0607a1_w)

To date, all cases have a direct or indirect link to one of four countries: Saudi Arabia, Qatar, Jordan, and the United Arab Emirates. **No cases have been reported in the United States.** Illness onsets were from April 2012 through May 2013. Of the 55 cases, 31 were fatal, for a case-fatality rate of 56%. The median age of cases is 56 years. All of the patients were aged ≥24 years, except for two children, one aged 2 years and one aged 14 years.

Eight clusters of illnesses have been reported by six countries (France, Italy, Jordan, Saudi Arabia, Tunisia, and UK). These clusters provide clear evidence of human-to-human transmission of MERS-CoV. The largest cluster reported to date consists of 25 cases, 14 of which were fatal, associated with a health-care facility in Al-Ahsa governorate in Saudi Arabia. Two of the case-patients in that cluster were health-care personnel who acquired the infection after exposure to patients with confirmed MERS-CoV infection.

The first case reported by France was in a person with an underlying immunosuppressive condition who initially had abdominal pain and diarrhea and subsequently developed respiratory complications. This case raises the possibility that presentations may not initially include respiratory symptoms. Among cases reported to WHO in which more detailed information is available, most are reported to have chronic underlying medical conditions or immunosuppression; such persons may be at increased risk of MERS-CoV infection or severe disease, or both. In some instances, sampling with nasopharyngeal swabs did not detect MERS-CoV by PCR; however, MERS-CoV was detected by PCR in lower respiratory tract specimens from those same patients. Therefore, lower tract respiratory specimens should be a priority for collection and PCR testing, in addition to nasopharyngeal swabs.

Recommendations

Recommendations and guidance on MERS-CoV case definitions, case investigation, specimen collection and shipment for testing, and infection control (including use of personal protective equipment) are available at the CDC MERS website (http://www.cdc.gov/coronavirus/MERS/index.html). Information and guidance posted on this website may change as we learn more about the virus. Please check CDC's MERS website regularly for the most current information. **[Questions should be directed to DHSS' Bureau of Communicable Disease Control and Prevention at 573/751-6113, or 800/392-0272 (24/7).]**

Surveillance

As a result of investigations suggesting incubation periods for MERS CoV may be longer than 10 days, the time period for considering MERS in persons who develop severe acute lower respiratory illness days after traveling from the Arabian Peninsula or neighboring countries* has been extended from within 10 days to within 14 days of travel.

In particular, persons who meet the following criteria for "patient under investigation" (PUI) should be reported to state and local health departments and evaluated for MERS-CoV infection:

- A person with an acute respiratory infection, which may include fever (≥ 38°C , 100.4°F) and cough; AND
- Suspicion of pulmonary parenchymal disease (e.g., pneumonia or acute respiratory distress syndrome based on clinical or radiological evidence of consolidation); AND
- History of travel from the Arabian Peninsula or neighboring countries* within 14 days; AND
- Symptoms not already explained by any other infection or etiology, including clinically indicated tests for community-acquired pneumonia† according to local management guidelines.

In addition, the following persons may be considered for evaluation for MERS-CoV infection:

- Persons who develop severe acute lower respiratory illness of known etiology within 14 days after traveling from the Arabian Peninsula or neighboring countries* but who do not respond to appropriate therapy; OR

- Persons who develop severe acute lower respiratory illness who are close contacts‡ of a symptomatic traveler who developed fever and acute respiratory illness within 14 days of traveling from the Arabian Peninsula or neighboring countries.*

In addition, CDC recommends that clusters of severe acute respiratory illness (SARI) should be investigated and, if no obvious etiology is identified, local public health officials should be notified and testing for MERS-CoV conducted if indicated.

CDC requests that state and local health departments report PUIs for MERS-CoV and clusters of SARI with no identified etiology to CDC. To collect data on PUIs, please use CDC's Interim Health Departments MERS-CoV Investigation Form available at http://www.cdc.gov/coronavirus/mers/guidance.html.

Laboratory Testing

Testing of specimens for MERS-CoV is currently being conducted at CDC. The Food and Drug Administration (FDA) issued an Emergency Use Authorization (EUA) on June 5, 2013, to authorize the use of the CDC Novel Coronavirus 2012 Real-time RT-PCR Assay (NCV-2-12 rRT-PCR Assay) to test for MERS-CoV in clinical respiratory, blood and stool samples. This EUA is needed because, at this time, no FDA-approved tests that identify MERS-CoV in clinical specimens are available. This assay will be deployed to Laboratory Response Network (LRN) laboratories in all 50 states over the coming weeks. Updated information about laboratories with the capacity to conduct MERS testing with the NCV-2-12 rRT-PCR Assay will be provided on CDC's MERS website (http://www.cdc.gov/coronavirus/mers/case-def.html).

To increase the likelihood of detecting MERS-CoV, CDC recommends collection of specimens from different sites-- for example, a nasopharyngeal swab and a lower respiratory tract specimen such as sputum, bronchoalveolar lavage, bronchial wash, or tracheal aspirate. Specimens should be collected at different times after symptom onset, if possible. Lower respiratory tract specimens should be a priority for collection and PCR testing; stool specimens are of lower priority. Specimens should be collected with appropriate infection control precautions http://www.cdc.gov/coronavirus/mers/case-def.html.

Medical providers caring for a patient who meets the above criteria for a "patient under investigation" (PUI) should immediately contact DHSS at 800/392-0272 (24/7) to discuss sending specimens for testing. Note that before any specimen is sent for testing, DHSS staff must first be consulted. After consultation and determination that the patient meets the criteria for testing, contact the Missouri State Public Health Laboratory (MSPHL) at 573/751-3334 or 800/392-0272 for guidance on specimen collection and shipping prior to collecting the specimens. This will help ensure that proper specimens are obtained in the right quantity, and that they are packed and transported properly.

Case Definitions

The MERS-CoV case definition continues to evolve and is available at http://www.cdc.gov/coronavirus/mers/case-def.html. In consultation with WHO, the definition of a probable case of MERS has been updated to also include persons with severe acute respiratory infection with no known etiology with an epidemiologic link to a confirmed MERS-CoV case.

Infection Control

There is clear evidence of limited human-to-human transmission, possibly involving different modes, such as droplet and contact transmission, but further studies are required to better understand the risks. Until the transmission characteristics of MERS-CoV are better understood, patients under investigation and probable and confirmed cases should be managed in healthcare facilities using standard, contact, and airborne precautions. As information becomes available, these recommendations will be re-evaluated and updated as needed.

*Countries considered to be on or neighboring the Arabian Peninsula include Bahrain, Iraq, Iran, Israel, Jordan, Kuwait, Lebanon, Oman, Palestinian territories, Qatar, Saudi Arabia, Syria, the United Arab Emirates (UAE), and Yemen.

† Examples of respiratory pathogens causing community-acquired pneumonia include influenza A and B, respiratory syncytial virus, adenovirus, *Streptococcus pneumoniae*, and *Legionella pneumophila*.

‡ Close contact is defined as 1) any person who provided care for the patient, including a health-care worker or family member, or who had other similarly close physical contact, or 2) any person who stayed at the same place (e.g., lived with or visited) as the patient while the patient was ill.

For more information:
For additional information, please consult the CDC MERS website at:
http://www.cdc.gov/coronavirus/mers/index.html

Questions should be directed to DHSS' Bureau of Communicable Disease Control and Prevention at 573/751-6113, or 800/392-0272 (24/7).