

Update #4 on Middle East Respiratory Syndrome Coronavirus (MERS-CoV)

Friday May 2, 2014

Target audience: Clinical laboratories

Background:

The first Middle East Respiratory Syndrome Coronavirus (MERS-CoV) case in the United States was confirmed today, Friday May 2, 2014 in a traveler. This virus is relatively new to humans and was first reported in Saudi Arabia in 2012.

On April 24, the patient traveled by plane from Riyadh, Saudi Arabia to London, England then from London to Chicago, Illinois. The patient then took a bus from Chicago to Indiana. On the 27th, the patient began to experience respiratory symptoms, including shortness of breath, coughing, and fever. The patient went to an emergency department in an Indiana hospital on April 28th and was admitted on that same day. The Indiana state public health laboratory and CDC confirmed MERS-CoV infection in the patient May 2, 2014.

CDC and Indiana health officials are not yet sure how the patient became infected with the virus. Exposure may have occurred in Saudi Arabia, where outbreaks of MERS-CoV infection are occurring. Officials also do not know exactly how many people have had close contact with the patient. MDCH is currently working with CDC to identify possible contacts with this patient who may be in Michigan.

So far, including this U.S. importation, there have been 401 confirmed cases of MERS-CoV infection in 12 countries. To date, all reported cases have originated in six countries in the Arabian Peninsula. Most of these people developed severe acute respiratory illness, with fever, cough, and shortness of breath; 93 people died. There is no available vaccine or specific treatment recommended for the virus.

CDC Case Definitions:

Patients who meet the criteria (below) for investigation of MERS-CoV infection should be reported to their local health department. MDCH laboratory can perform PCR testing for MERS CoV. Consultation and prior authorization are still required before specimens will be accepted.

Authorization for testing can be obtained by contacting MDCH Communicable Disease Division at: 517-335-8165 during normal business hours or 517-335-9030 after normal business hours.

Patient Under Investigation (PUI)

A patient under investigation (PUI) is a person with the following characteristics:

- fever ($\geq 38^{\circ}\text{C}$, 100.4°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 department

Confirmed Case

A confirmed case is a person with laboratory confirmation of MERS-CoV infection

Probable Case

A probable case is a PUI with absent or inconclusive laboratory results for MERS-CoV infection who is a close contact of a laboratory-confirmed case.

<http://www.cdc.gov/coronavirus/mers/case-def.html#pui>

Specimen and Testing Recommendations:

To date, little is known about pathogenic potential and transmission dynamics of MERS-CoV. To increase the likelihood of detecting infection, CDC recommends collecting multiple specimens from different sites at different times after symptom onset, if possible. Lower respiratory tract specimens should be a priority for collection and PCR testing. Refer to the complete guidelines at the link below.

Testing for MERS-CoV and other respiratory pathogens can be done simultaneously by molecular or antigen detection methods. Viral isolation in cell culture of MERS-CoV specimens is NOT recommended.

<http://www.cdc.gov/coronavirus/mers/guidelines-clinical-specimens.html>

Steps for laboratories to take now:

No action is required at this time, other than to monitor the situation and be aware of current guidance.

Further Information:

More information is available on the CDC MERS website at:

<http://www.cdc.gov/coronavirus/mers/hcp.html>

<http://www.cdc.gov/coronavirus/mers/interim-guidance.html>

<http://www.cdc.gov/coronavirus/mers/index.html>

About Coronavirus:

<http://www.cdc.gov/coronavirus/about/index.html>

Frequently Asked MERS Questions and Answers:

<http://www.cdc.gov/coronavirus/mers/faq.html>

Questions and Additional Information

For laboratory related questions, please contact

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