



Massachusetts Department of Public Health  
Division of Epidemiology and Immunization  
and  
The Boston Public Health Commission



**CLINICAL ADVISORY**  
**Middle East Respiratory Syndrome Coronavirus (MERS-CoV)**  
**June 14, 2013**

**SUMMARY**

1. As of June 12, 2013, over 50 cases of MERS-CoV have been reported and 32 of these people have died. So far, there are no reports of anyone in the United States getting infected with MERS-CoV.
2. Most people with recognized MERS-CoV infection had severe acute respiratory illness with symptoms of fever, cough, and shortness of breath, but some people were reported with mild respiratory illness.
3. There is evidence of human-to-human transmission with close contact. Standard, contact and airborne precautions are recommended for management of hospitalized patients with known or suspected MERS-CoV infection.
4. Diagnostic testing to detect MERS-CoV is available at the MDPH Hinton State Laboratory Institute.
5. Clinicians should consider MERS-CoV in patients with an acute respiratory infection and history of travel to the Arabian Peninsula or neighboring countries\* in the 14 days prior to onset of symptoms.
6. Providers can call their local health department and/or the Massachusetts Department of Public Health (MDPH) for further guidance.
7. There is no vaccine for prevention of MERS-CoV infection and no specific therapy has been studied or identified.

**Background**

Over the past year, cases of serious respiratory infection have occurred due to a newly emergent coronavirus similar to, but distinct from, the severe acute respiratory syndrome coronavirus (SARS-CoV) that emerged in 2003. This novel coronavirus, now designated the Middle East respiratory syndrome coronavirus (MERS-CoV), seems to have had its origins in the Arabian Peninsula. Thus far, over 50 cases have been documented in the Middle East and Europe, with all European introductions related to exposure in the Middle East.

For more detailed and up-to-date information go to the Centers for Disease Control and Prevention (CDC) MERS-CoV web page at: <http://www.cdc.gov/coronavirus/mers/>

Similar to the SARS-CoV, the MERS-CoV is capable of causing severe lower respiratory tract infection. Milder illness has also been described. The MERS-CoV is most similar to a coronavirus found in bats, but as in the case of the SARS-CoV, exposure to other intermediate animals may be a source of MERS-CoV infection. The exact nature of exposure causing infection is not known, but human-to-human transmission has been observed, including in healthcare facilities. There have been three healthcare associated clusters of infection described.

## Reporting

We ask that clinicians report the following to their local health departments and MDPH. Providers in Boston are required to notify the Boston Public Health Commission (BPHC):

- A person with an acute respiratory infection which may include fever ( $\geq 38^{\circ}\text{C}$ ,  $100.4^{\circ}\text{F}$ ) 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 countries in the Arabian Peninsula or neighboring countries\* within 14 days; AND
- not already explained by any other infection or etiology, including all clinically indicated tests for community-acquired pneumonia.

The following may also 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 countries in the Arabian Peninsula and 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 after travel from the Arabian Peninsula and neighboring countries\*.

\* Bahrain, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Palestinian territories, Oman, Qatar, Saudi Arabia, Syria, the United Arab Emirates (UAE), and Yemen

## Infection control

Standard, contact and airborne precautions are recommended for management of hospitalized patients with known or suspected MERS-CoV infection. These recommendations are consistent with those recommended for the coronavirus that caused SARS in 2003. The recommendations are based on available information (as of June 10, 2013) and will be re-evaluated and updated as needed when new information becomes available. (see <http://www.cdc.gov/coronavirus/mers/downloads/Isolation2007.pdf>).

## Testing

The MDPH William A. Hinton State Laboratory Institute is certified to perform FDA-approved emergency use testing with the CDC Novel Coronavirus 2012 Real-time RT-PCR Assay for the presumptive detection of MERS-CoV. After consultation with your local health department and/or MDPH, testing will only be performed on patients meeting specific travel and symptom criteria. **Label each specimen with the patient's ID number, specimen type and the date the sample was collected. Consider lower respiratory tract specimens a priority for collection and PCR testing. Stool and serum specimens are of lower priority.**

## Specimen Type and Priority Laboratory Testing

To increase the likelihood of detecting infection, submit specimens from multiple sites including lower respiratory samples such as sputum, bronchoalveolar lavage (BAL), bronchial wash or tracheal aspirate, and nasopharyngeal and/or oropharyngeal swabs in viral transport media.

**Lower respiratory specimens** such as BAL, tracheal aspirate, pleural fluid or sputum should be sent in a sterile, leak-proof, screw-cap collection cup or sterile dry container. Specimens can be held at 2-8°C for <72 hours; if >72 hours, specimens should be frozen at -70°C.

**Upper respiratory specimens** For nasopharyngeal and oropharyngeal swabs, use only synthetic fiber swabs with plastic shafts and place swabs immediately into sterile tubes containing 2-3 ml of viral transport media. Do not use calcium alginate swabs or swabs with wooden shafts. Specimens can be refrigerated at 2-8°C for <72 hours; if >72 hours, specimens should be frozen at -70°C.

For nasal aspirates collect 2-3 ml into a sterile, leak-proof, screw-cap collection cup or sterile dry container. Specimens can be refrigerated at 2-8°C for <72 hours; if >72 hours, specimens should be frozen at -70°C.

**Stool:** While MDPH cannot currently test stool specimens, it is recommended that stool also be collected and submitted, unless collection of stool will delay shipment of respiratory specimens. Stool can be held refrigerated at 2-8°C for <72 hours.

**Serum:** It is also recommended that serum (5-10 ml whole blood) be collected during the acute stage of the disease for eventual serum antibody testing. Serum can be refrigerated at 2-8°C; do not freeze.

All specimens must be pre-packed to prevent breakage and spillage. Clinical specimens should be submitted using the MDPH SLI's clinical specimen submission form (SS-SLI-1-13) (<http://www.mass.gov/eohhs/docs/dph/laboratory-sciences/general-submission-form.pdf>).

**Ship to:**           **Attention:** Virus Isolation Laboratory  
Hinton State Laboratory Institute  
305 South Street  
Jamaica Plain, MA 02130

For assistance with specimen submission call The Division of Epidemiology and Immunization at (617) 983-6800 or the Hinton State Laboratory Institute at (617) 983-6688.

<p>For questions and concerns about MERS-CoV surveillance, reporting and control please call MDPH at 617-983-6800 or your local health department. In Boston, providers should report cases and direct questions to the Boston Public Health Commission at 617-534-5611 instead of MDPH. Additional information is also available at <a href="http://www.cdc.gov">www.cdc.gov</a></p>
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