



Health, Housing & Community Services Department  
Public Health Division  
(510) 981-5300

Janet Berreman, MD, MPH  
Health Officer

**Health Advisory**  
**May 20, 2014**  
**Middle East Respiratory Syndrome**  
**Coronavirus (MERS-CoV) in U.S.**

**Please distribute to all providers in your practice**

**Situation:** The Centers for Disease Control and Prevention (CDC) has confirmed the first three cases of Middle East Respiratory Syndrome Coronavirus (MERS-CoV) in the United States. Two cases were imported and occurred in healthcare workers exposed in Saudi Arabia. The third case occurred in an individual with known exposure to one of the imported cases.

**Background:** MERS-CoV was first reported in Saudi Arabia in 2012. All reported cases have been linked to countries in and near the Arabian Peninsula. In some instances, the virus has spread from person to person through close contact. However, there is currently no evidence of sustained spread of MERS-CoV in community settings.

More than 500 cases of human MERS-CoV infections, including 145 deaths, have been confirmed worldwide since April 2012. A sharp increase in cases has occurred since mid-March 2014. In addition to affected countries in the Arabian Peninsula (Jordan, Kuwait, Oman, Qatar, Saudi Arabia, United Arab Emirates, and Yemen), cases have been reported in Europe, Asia, and North America.

**ACTIONS REQUESTED OF CLINICIANS:**

1. **SUSPECT MERS-CoV** in patients with a fever  $\geq 38^{\circ}\text{C}$  ( $100.4^{\circ}\text{F}$ ) **and** pneumonia or acute respiratory distress syndrome (ARDS), **and**
  - a. Who have traveled to countries in/near the Arabian Peninsula within 14 days of symptom onset **or**
  - b. Who meet other criteria described below in "Criteria for Testing".
2. **IMPLEMENT AIRBORNE PRECAUTIONS immediately** for suspected cases. Mask and isolate patient in an airborne infection isolation room. Do not use a regular exam room for at least two hours after a suspected MERS-CoV patient has left the room. Notify your facility's Infection Control Professional immediately.
3. **REPORT suspected MERS-CoV cases immediately** to Berkeley Public Health by phone at (510) 981-5300; after hours, call (510) 981-5911 and ask to speak to the Public Health Officer.
4. **TEST suspected cases who meet the clinical case definition.** Collect lower respiratory specimens, a throat or NP swab, serum and stool and HOLD for testing by Public Health. Call Berkeley Public Health as above for prior approval and to coordinate specimen submission.

**Clinical Presentation:** Most confirmed cases have had severe acute respiratory illness with fever, cough, shortness of breath, and abnormal chest imaging. Patients may also have diarrhea, vomiting,



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headache, chills, and myalgia. Complications may include pneumonia, ARDS, multi-organ failure, coagulopathy, and pericarditis. Some patients with confirmed MERS-CoV infection who were tested after close contact with MERS patients have had milder illness or were asymptomatic. Available data suggest that symptoms usually begin five to 14 days after exposure.

**Criteria for Testing:** MERS-CoV polymerase chain reaction (PCR) testing will be performed by the California Department of Public Health (CDPH) only on patients who meet the following criteria:

**Fever  $\geq 38^{\circ}\text{C}$  ( $100.4^{\circ}\text{F}$ ) AND pneumonia or acute respiratory distress syndrome AND one of the following:**

- 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 infection is being evaluated.

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

**Specimen collection:** Acceptable specimens, from highest to lowest yield:

1. Lower respiratory tract - bronchoalveolar lavage, tracheal aspirate, pleural fluid and/or sputum
2. Upper respiratory tract - nasopharyngeal and oropharyngeal (throat) swabs collected on a synthetic swab (e.g., Dacron) only. Nasal washes are **not** acceptable.
3. Serum – collect 5 ml of blood in a red top tube. Spin and retain serum.
4. Stool or rectal swab.

Respiratory samples should be sent in viral transport media (VTM) only and stored and shipped at 2°-8°C. Laboratories should NOT attempt to perform viral culture on specimens from patients with suspected or laboratory-confirmed MERS infection.

### **Additional Information**

- CDPH: <http://www.cdph.ca.gov/programs/cder/Pages/MERS-CoV.aspx>
- CDC: <http://www.cdc.gov/coronavirus/mers/index.html>
- Specimen collection: <http://www.cdc.gov/coronavirus/mers/guidelines-clinical-specimens.html>
- Specimen submittal form (use "General" submittal form):  
<http://www.cdph.ca.gov/programs/vrdl/Pages/CurrentVRDLSpecimenSubmittalforms.aspx>