CAHAN San Diego
California HEALTH ALERT NETWORK

To: CAHAN San Diego Participants
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From: Public Health Services, Epidemiology and Immunizations Services Branch

Middle East Respiratory Syndrome Coronavirus (MERS-CoV)

This health notice provides information and guidance regarding the evaluation of MERS-CoV infection among individuals who have travelled to the Arabian Peninsula, especially to the Kingdom of Saudi Arabia (KSA) for the upcoming annual pilgrimage (Hajj). It also contains recommendations for local healthcare providers and MERS-CoV resource links.

Key Points:

- Sporadic cases of MERS-CoV continue to occur in the Arabian Peninsula.
- The Hajj will take place August 19 through 24, 2018, and thousands of Americans will join approximately two million Muslims on this annual pilgrimage to Mecca in KSA.
- In past years, state and local health departments have experienced an increase in patients under investigation (PUIs) for MERS-CoV two to three weeks following the completion of the Hajj as travelers return to the United States.
- Regarding MERS-CoV risk, healthcare providers should counsel travelers to avoid camel contact in KSA and to report their travel history if they are ill upon return. Providers should maintain awareness and identify patients who need to be evaluated for MERS-CoV based on clinical features and epidemiological risk.
- Obtain travel histories from all patients and report individuals who meet the MERS-CoV patient under investigation (PUI) criteria to the County Epidemiology Program.
- MERS-CoV testing should be performed through the San Diego County Public Health Laboratory (SDCPHL), as respiratory viral panels performed by commercial laboratories generally do not test for the strain of coronavirus that causes MERS-CoV infection.

Update on Cases

From September 2012, when MERS-CoV was first identified, to the end of June 2018, the World Health Organization (WHO) has been notified of 2,229 laboratory-confirmed cases of MERS-CoV infection reported from 27 countries, including 791 (35%) deaths. About 85% of cases have been reported from KSA, the most recent being on August 5, 2018. Cases of MERS-CoV infection identified outside of the Middle East occur in individuals who were infected in the Middle East and then traveled elsewhere. The largest MERS-CoV outbreak outside the Arabian Peninsula occurred in the Republic of Korea in 2015 after a single patient exposure in an emergency department.

Symptoms and Management

Middle East Respiratory Syndrome is caused by a coronavirus not previously found in people. Common symptoms in patients with MERS-CoV include fever, chills, cough, shortness of breath, headache, and myalgia. Evidence of pneumonia is typical. Most hospitalized patients have had chronic co-morbidities. No specific treatment is currently available for MERS-CoV infection. Clinical management includes supportive care, identification of complications, and early implementation of recommended infection prevention and control measures. The clinical spectrum of MERS-CoV infection may range from asymptomatic to an acute and progressively severe respiratory illness. The importance of obtaining a patient travel history cannot be overemphasized.

When evaluating patients for MERS-CoV, those with severe acute lower respiratory illness should also be evaluated for common causes of community-acquired pneumonia, such as influenza A and B, respiratory syncytial virus, *Streptococcus pneumoniae*, and *Legionella pneumophila*. Positive results for another respiratory pathogen should not necessarily preclude testing for MERS-CoV, since co-infection can occur.

Guidance for Healthcare Providers

Routinely **obtain travel histories from all patients** and consider MERS-CoV as a diagnosis for those who meet the patient under investigation (PUI) criteria for MERS-CoV infection (see table on following page). Healthcare providers should integrate early inquiry about travel history into the workflow of evaluating ill patients, especially those with fever and cough or with fever and rash, so that appropriate infection control precautions can be taken.

Patients who meet the MERS-CoV PUI criteria should immediately be reported to the Epidemiology Program at 619-692-8499 during business hours and 858-565-5255 on evenings, weekends and County-observed holidays. Timely diagnostic suspicion, reporting, and infection control can help prevent MERS-CoV transmission in healthcare settings.

Standard, contact, and airborne precautions should be taken when caring for PUIs or confirmed cases of MERS-CoV infection. A PUI should be immediately placed in a private room with the door closed until placement in an Airborne Infection Isolation Room (AIIR) can be arranged. Healthcare providers should adhere to Centers for Disease Control and Prevention (CDC) infection control guidance for MERS-CoV when managing patients in hospital settings.

MERS-CoV testing should occur through SDCPHL after approval from the County Epidemiology Program. Respiratory viral panels performed by commercial laboratories generally do not test for the strain of coronavirus that causes MERS-CoV infection. **Three types of specimens should be collected for MERS-CoV testing:**

1) lower respiratory specimen (e.g., induced sputum, tracheal aspirate, or bronchoalveolar lavage);
2) upper respiratory specimen (e.g., nasopharyngeal swab AND oropharyngeal swab, nasopharyngeal wash/ aspirate or nasal aspirate); and
3) serum sample.

While lower respiratory tract specimens have the highest yield for MERS-CoV, CDC strongly recommends collection and testing of all three specimens types. CDC has released laboratory guidance on MERS-CoV testing which provides additional information. Questions about specimen collection and packaging for MERS-CoV may be directed to SDCPHL at 619-692-8500, option #1.

Patient Under Investigation (PUI) Criteria

PUI criteria for MERS-CoV in the table on the following page serve as guidance for testing. Patients should be evaluated and discussed with the County Epidemiology Program on a case-by-case basis, especially if a patient's clinical presentation or exposure history is questionable.

Clinical Features		Epidemiologic Risk
Severe Illness Fever[1] *and* pneumonia or acute respiratory distress syndrome (based on clinical or radiological evidence	**AND**	A history of travel from countries in or near the Arabian Peninsula[2] within 14 days before symptom onset, or close contact[3] 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-*** 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 in the U.S.
Milder illness Fever[1] *and* symptoms of respiratory illness (not necessarily pneumonia; e.g., cough, shortness of breath)	**AND**	A history of being in a healthcare facility (as a patient, worker, or visitor) within 14 days before symptom onset in a country or territory in or near the Arabian Peninsula[2] in which recent healthcare-associated cases of MERS-CoV have been identified.
Fever[1] *or* symptoms of respiratory illness (not necessarily pneumonia; e.g., cough, shortness of breath)	**AND**	Close contact[3] with a confirmed MERS-CoV case while the case was ill.

[1] Fever may not be present in some patients, such as those who are very young, elderly, immunosuppressed, or taking certain medications. Clinical judgement should be used to guide testing of patients in such situations.
[2] Countries considered in the Arabian Peninsula and neighboring include: Bahrain; Iraq; Iran; Israel, the West Bank, and Gaza; Jordan; Kuwait; Lebanon; Oman; Qatar; Saudi Arabia; Syria; the United Arab Emirates; and Yemen.
[3] Definition of close contact can be found at https://www.cdc.gov/coronavirus/mers/case-def.html.

Patient Education

Patients who are planning a trip or who have recently traveled to the Arabian Peninsula should be advised that if fever with cough or shortness of breath develops within 14 days after travel, they should seek medical attention promptly. When possible, the patient should contact their healthcare provider prior to seeking care so that appropriate infection control precautions may be taken. A poster for waiting rooms is available to increase patient awareness about MERS-CoV.

Additional MERS-CoV Resources

Updated MERS-CoV information may be found at dedicated websites maintained by WHO, CDC, and the California Department of Public Health (CDPH). In January 2017, CDPH updated a MERS-CoV Quicksheet that provides a useful summary of MERS-CoV response measures.

Thank you for your participation.

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