CAHAN San Diego
California HEALTH ALERT NETWORK

To: CAHAN San Diego Participants
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From: Epidemiology Program, Public Health Services

CAHAN Information: Middle East Respiratory Syndrome Coronavirus (MERS-CoV) and the Hajj

This health notice provides information and guidance regarding the evaluation of MERS-CoV infection among individuals who have traveled 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

- The Hajj will take place August 9-14, 2019 and thousands of Americans will join approximately two million Muslims on this annual pilgrimage to Mecca.
- 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.
- Healthcare providers should educate travelers to the Arabian Peninsula about MERS-CoV and other communicable diseases, recommend they avoid contact with camels and camel products (e.g,. milk, urine), and report their travel history if they are ill upon return. Providers should maintain awareness and identify patients who should be evaluated for MERS-CoV based on clinical features and epidemiological risk.
- Providers should obtain travel histories from all patients and report individuals who meet the MERS-CoV PUI criteria to the County Epidemiology Program.
- When indicated, MERS-CoV testing should be arranged through the San Diego County Public Health Laboratory (SDCPHL), as respiratory viral panels performed by commercial laboratories do not test for the strain of coronavirus that causes MERS-CoV infection.

Update on MERS-CoV Cases

From 2012, when MERS-CoV was first identified, through June 30, 2019, the World Health Organization (WHO) has been notified of 2,449 laboratory-confirmed cases of MERS-CoV infection reported from 27 countries, including 845 (35%) deaths. Approximately 84% of cases have been reported from KSA, with the most recent cases reported in late July 2019. 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. Rarely, small outbreaks have occurred outside of the Middle East. 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 (MERS) is caused by a coronavirus not previously found in people. Common symptoms in patients with MERS-CoV infection include fever, chills, cough, shortness of breath, headache, and myalgia. Evidence of pneumonia is typical. Some cases have experienced diarrhea, nausea, or vomiting. 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. Approximately 35% of confirmed cases have died. The importance of obtaining a patient travel history cannot be overemphasized.

Patients 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,* at the same time as obtaining lab specimens for MERS-CoV testing. Positive results for another respiratory pathogen should not necessarily preclude testing for MERS-CoV, since co-infection can occur.

Patient Under Investigation (PUI) Criteria

PUI criteria for MERS-CoV serve as guidance for testing. Patients should be evaluated and discussed with the Epidemiology Program on a case-by-case basis, especially if 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[1] and acute respiratory illness (not necessarily pneumonia) within 14 days after traveling from countries in or near the Arabian Peninsula[2]. ***– OR –*** A member of a cluster of patients with severe acute respiratory illness (e.g., fever[1] and pneumonia requiring hospitalization) of unknown etiology in which MERS-CoV is being evaluated, in consultation with state and local health departments in the US.
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 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 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; Kingdom of Saudi Arabia (KSA); Kuwait; Lebanon; Oman; Qatar; Syria; the United Arab Emirates (UAE); and Yemen.*
3. *Definition of close contact can be found at https://www.cdc.gov/coronavirus/mers/case-def.html#foot3.*

Guidance for Healthcare Providers

- Routinely **obtain travel histories from all patients** and consider MERS as a diagnosis for those who meet the PUI criteria for MERS-CoV infection.
    - 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.

- 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.

- Immediately report patients who meet the PUI criteria for MERS-CoV to the County Epidemiology Program at 619-692-8499 during business hours and 858-565-5255 on evenings, weekends and County-observed holidays.

- Arrange MERS-CoV testing through the San Diego County Public Health Laboratory (SDCPHL).
    - Respiratory viral panels performed by commercial laboratories do not test for the strain of coronavirus that causes MERS-CoV infection.
    - Three types of specimens should be collected for MERS-CoV testing:
        - lower respiratory specimen (e.g., induced sputum, tracheal aspirate, broncheoalveolar lavage, or pleural fluid);
        - upper respiratory specimen (e.g., nasopharyngeal swab AND oropharyngeal swab, nasopharyngeal wash/aspirate or nasal aspirate); and
        - serum specimen ≥1 full tube (5-10 ml blood for adults).
    - CDC has released laboratory guidance on MERS-CoV testing which provides additional information.
    - Questions about specimen collection, storage, and packaging for MERS-CoV testing may be directed to SDCPHL at 619-692-8500, option 1, or by email.

- Educate patients planning travel to the Arabian Peninsula about MERS-CoV and other communicable diseases.
    - Patients should understand 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.
    - KSA requires documentation of a single dose of the meningococcal quadrivalent ACWY vaccine for pilgrims. See KSA Ministry of Health Hajj Health Regulations website for more details.
    - Participants in the Hajj age six months and older who do not have evidence of immunity or who lack written documentation of measles vaccination should be immunized prior to travel.
    - See the CDC Health Information for Travelers to Saudi Arabia Clinician View for all specific immunization recommendations.

Thank you for your participation.

CAHAN San Diego
County of San Diego, Health & Human Services Agency
Epidemiology and Immunization Services Branch
Phone: (619) 692-8499, Fax: (858) 715-6458
Urgent phone for pm/weekends/holidays: (858) 565-5255
E-mail: cahan@sdcounty.ca.gov
Public-Access Website: http://www.cahansandiego.com