

ACEP FACT SHEET: MERS (Middle Eastern Respiratory Syndrome)

BRIEF DESCRIPTION:

MERS is a contagious, potentially severe and lethal viral illness caused by the MERS Coronavirus (MERS-CoV) which was first identified in September, 2012.

- MERS may spread via close contact with an infected individual although the precise mechanism is not yet well understood.
- To date, most spread of the virus has occurred in health care facilities caring for MERS patients, with no sustained spread in the community at large.
- Incubation period is usually 5-6 days following exposure but may range from 2-14 days.
- Individuals presenting with this illness have either lived in or visited the Arabian Peninsula (or neighboring countries) or have had close contact with an infected individual. (This includes the following countries: Bahrain; Iraq; Iran; Israel, the West Bank, and Gaza; Jordan; Kuwait; Lebanon; Oman; Qatar; Saudi Arabia; Syria; the United Arab Emirates, and Yemen.)
- While MERS is associated with individuals living or visiting the Arabian Peninsula and neighboring countries, it has the potential to spread through travel. For example, the 2015 outbreak in Korea has involved at least 1,219 confirmed cases (6/10/2015), all of which have been traced to a single index case of a patient who travelled to the Arabian Peninsula. The subsequent cases have been in other patients, healthcare workers and visitors to healthcare facilities where MERS patients have received care.
- As of June 11, 2015, there have been 2 patients in the US who have tested positive for MERS, both of which were imported cases from the Arabian Peninsula.

CLINICAL PRESENTATION:

Patients at risk for MERS will with a history of travel to a country in or near the Arabian Peninsula, close contact with a known or suspected MERS patient, or history of being in a healthcare facility where MERS patients were being treated. The typical initial clinical signs and symptoms are those of an upper respiratory infection and may include:

- Fever, chills/rigors
- Non-productive cough
- Shortness of breath
- Myalgias
- Headache
- Other symptoms can include sore throat, coryza, nausea, vomiting, dizziness, sputum production, diarrhea, and abdominal pain.

CLINICAL COURSE:

Pneumonia may develop in these patients with potential progression to Acute Respiratory Distress Syndrome (ARDS). This disease can progress rapidly to respiratory failure, septic shock, multiple organ failure and death, particularly in patients with underlying chronic medical conditions. Renal failure, pericarditis and disseminated intravascular coagulation (DIC) have also been observed as complications. Case fatality rate is reported to be approximately 35%. Current available treatment consists of supportive care and management of complications.

IMPLICATIONS FOR EMERGENCY CARE:

- Patients who meet the following criteria (ref: <http://www.cdc.gov/coronavirus/mers/case-def.html>), should be evaluated for MERS-CoV and reported to your hospital infection control specialist and your local health department: [Triage graphic available here: <http://www.cdms.uci.edu/PDF/KOENIG%20CDMS%20MERS%2031.pdf>]
 - Fever AND pneumonia or acute respiratory distress syndrome (based on clinical or radiologic evidence) AND one of the following:
 - A 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
 - A history of being in a healthcare facility (as a patient, worker, or visitor) in the Republic of Korea within 14 days before symptom onset, 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 US,
 - OR
 - Fever 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 in which recent healthcare-associated cases of MERS have been identified,
 - OR
 - Fever OR symptoms of respiratory illness (not necessarily pneumonia; e.g., cough, shortness of breath) AND close contact with a confirmed MERS case.

EMERGENCY DEPARTMENT APPROACH (The Three I's)

- The majority of patients with respiratory symptoms in the ED do not have MERS, and the risk of transmission posed by MERS patients with early, limited symptoms is lower than that from a

patient hospitalized with severe disease. Nevertheless, because early MERS symptoms are similar to those seen with other respiratory illnesses, triage and evaluation processes should consider and systematically assess patients for the possibility of MERS.

- **Identify travel and direct exposure history:**

- Has patient lived in or traveled to a country with MERS, or had contact with an individual with confirmed MERS within the previous 21 days? **IF YES:**

- **Identify signs and symptoms:**

- Fever (subjective or $\geq 100.4^{\circ}\text{F}$ or 38.0°C) or any MERS-compatible symptoms? **IF YES:**

- **Isolate patient immediately:**

- Avoid unnecessary direct contact.
- Standard, contact and airborne precautions are recommended in treating/ evaluating patients with known or suspected MERS.
- Separate the patient from family, if possible, and place family or close contacts in a safe area, not the waiting room.
- Move suspected MERS patient to an isolation room or isolation area in the ED.
- Only essential personnel with designated roles should evaluate and treat the patient.
- **Inform:** your hospital infection control authority, and the local Health Department.

BOTTOM LINE:

Middle East Respiratory Syndrome (MERS) represents a potential severe illness which should be considered in patients presenting with symptoms of a respiratory illness who satisfy the travel/exposure criteria cited above. As seen with Sudden Acute Respiratory Syndrome (SARS), MERS represents a significant threat to healthcare providers caring for MERS-infected patients.

ADDITIONAL INFORMATION

Background:

MERS is an emerging infectious disease (EID) about which little is currently known. The actual mode of transmission remains unclear. The host reservoir appears to include dromedary camels. There is some recent evidence that this disease has been under-diagnosed in the past and that MERS may represent an emerging disease in North Africa.

Prevention:

- There is currently no known vaccine or form of chemoprophylaxis for MERS.

- Close contact with infected individuals should be avoided without appropriate personal protective equipment (PPE).

For more information about MERS, please see:

<http://www.cdc.gov/coronavirus/mers/index.html> - (this link will have most current case information)
http://www.who.int/csr/disease/coronavirus_infections/InterimGuidance_ClinicalManagement_NovelCoronavirus_11Feb13u.pdf?ua=1
<http://www.who.int/mediacentre/news/situation-assessments/2-june-2015-south-korea/en/>
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3828229/>

(This information abstracted from www.cdc.gov)

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