

## MIDDLE EAST RESPIRATORY SYNDROME CORONAVIRUS (MERS-CoV)



Centers for Disease Control and Prevention  
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### What is MERS?

MERS is a viral respiratory illness first reported in Saudi Arabia in 2012. Middle East Respiratory Syndrome (MERS) is an illness caused by a virus (more specifically, a coronavirus) called Middle East Respiratory Syndrome Coronavirus (MERS-CoV). MERS affects the respiratory system (lungs and breathing tubes). Most MERS patients developed severe acute respiratory illness with symptoms of fever, cough and shortness of breath. About 30% of them died.

Health officials first reported the disease in Saudi Arabia in September 2012. Through retrospective investigations, health officials later identified that the first known cases of MERS occurred in Jordan in April 2012. So far, all cases of MERS have been linked to countries in and near the Arabian Peninsula. This virus has spread from ill people to others through close contact, such as caring for or living with an infected person. However, there is no evidence of sustained spreading in community settings.

MERS can affect anyone. MERS patients have ranged in age from younger than 1 to 94 years old.

CDC continues to closely monitor the MERS situation globally and is working with the World Health Organization and other partners to understand the risks of this virus, including the source, how it spreads, and how infections might be prevented. CDC recognizes the potential for MERS-CoV to spread further and cause more cases globally and in the U.S. We have provided information for travelers and are working with health departments, hospitals, and other partners to prepare for this.

Source: <http://www.cdc.gov/coronavirus/MERS/index.html>

### PEOPLE WHO MAY BE AT INCREASED RISK FOR MERS

#### ***Recent Travelers from the Arabian Peninsula***

If you develop a fever and symptoms of respiratory illness, such as cough or shortness of breath, within 14 days after traveling from countries in or near the Arabian Peninsula\*, you should call ahead to a healthcare provider and mention your recent travel. While sick, stay home from work or school and delay future travel to reduce the possibility of spreading illness to others.

#### ***Close Contacts of an Ill Traveler from the Arabian Peninsula***

If you have had close contact\*\* with someone who recently traveled from a country in or near the Arabian Peninsula\*, and the traveler has/had fever and symptoms of respiratory illness, such as cough or shortness of breath, you should monitor your health for 14 days, starting from the day you were last exposed to the ill person.

If you develop fever and symptoms of respiratory illness, such as cough or shortness of breath, you should call ahead to a healthcare provider and mention your recent contact with the traveler. While sick, stay home from work or school and delay future travel to reduce the possibility of spreading illness to others.

#### ***Close Contacts of a Confirmed or Probable Case of MERS***

If you have had close contact\*\* with someone who has a probable or confirmed MERS-CoV infection, you should contact a healthcare provider for an evaluation. Your healthcare provider may request laboratory testing and outline additional recommendations, depending on the findings of your evaluation and

whether you have symptoms. You most likely will be asked to monitor your health for 14 days, starting from the day you were last exposed to the ill person. Watch for these symptoms:

- Fever (100° Fahrenheit or higher). Take your temperature twice a day.
- Coughing
- Shortness of breath
- Other early symptoms to watch for are chills, body aches, sore throat, headache, diarrhea, nausea/vomiting, and runny nose.

If you develop symptoms, call your healthcare provider as soon as possible. Before your medical appointment, call the healthcare provider and tell him or her about your possible exposure to MERS-CoV. This will help the healthcare provider’s office take steps to keep other people from getting infected. Ask your healthcare provider to call the local or state health department.

**Healthcare Personnel Not Using Recommended Infection-Control Precautions**

Healthcare personnel should adhere to recommended infection control measures, including standard, contact, and airborne precautions, while managing symptomatic close contacts, patients under investigation, and patients who have probable or confirmed MERS-CoV infections. Recommended infection control precautions should also be utilized when collecting specimens.

Healthcare personnel who had close contact\*\* with a confirmed or probable case of MERS while the case was ill, if not using recommended infection control precautions (e.g. appropriate use of personal protective equipment), are at increased risk of developing MERS-CoV infection and should be evaluated and monitored by a healthcare professional with a higher index of suspicion. For more information, see Interim Infection Prevention and Control Recommendations for Hospitalized Patients with Middle East Respiratory Syndrome Coronavirus (MERS-CoV).

*\*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 (UAE); and Yemen.*

*\*\*Close contact is defined as a) any person who provided care for the patient, including a healthcare worker or family member, or had similarly close physical contact; or b) any person who stayed at the same place (e.g. lived with, visited) as the patient while the patient was ill.*

Source: <http://www.cdc.gov/coronavirus/MERS/index.html>

**MERS IN THE ARABIAN PENINSULA**

**What is the Current Situation?**

*Countries in or near the Arabian Peninsula*

Cases of MERS (Middle East Respiratory Syndrome) have been identified in multiple countries in the Arabian Peninsula.\* There have also been cases in several other countries in travelers who have been to the Arabian Peninsula and, in some instances, their close contacts. Two cases have been confirmed in two health care workers living in Saudi Arabia who were visiting the United States. For more information, see CDC’s MERS website.



CDC does not recommend that travelers change their plans because of MERS. Most instances of person-to-person spread have occurred in health care workers and other close contacts (such as family members and caregivers) of people sick with MERS. If you are concerned about MERS, you should discuss your travel plans with your doctor.

## What can travelers do to prevent MERS?

### *All travelers*

All travelers can take these everyday actions to help prevent the spread of germs and protect against colds, flu, and other illnesses:

- Wash your hands often with soap and water. If soap and water are not available, use alcohol-based hand sanitizer.
- Avoid touching your eyes, nose, and mouth. Germs spread this way.
- Avoid close contact with sick people.
- Be sure you are up-to-date with all of your shots, and if possible, see your health care provider at least 4–6 weeks before travel to get any additional shots.
- Visit CDC's Travelers' Health website for more information on healthy travel.

### *Health care workers*

People who are traveling to provide health care services in the Arabian Peninsula should review CDC's recommendations for infection control of confirmed or suspected MERS cases.

### *Exposure to camels*

The MERS virus has been found in some camels, and some MERS patients have reported contact with camels. However, we do not know exactly how people become infected with the virus—many people with MERS have had close contact with a person sick with MERS.

The World Health Organization has posted a general precaution for anyone visiting farms, markets, barns, or other places where animals are present. Travelers should practice general hygiene measures, including regular handwashing before and after touching animals, and avoid contact with sick animals. Travelers should also avoid consumption of raw or undercooked animal products.

For more information, see [http://www.who.int/csr/disease/coronavirus\\_infections/faq/en/](http://www.who.int/csr/disease/coronavirus_infections/faq/en/)

The World Health Organization considers certain groups to be at high risk for severe MERS; these groups include people with diabetes, kidney failure, or chronic lung disease and people who have weakened immune systems. The World Health Organization recommends that these groups take additional precautions:

- Avoid contact with camels.
- Do not drink raw camel milk or raw camel urine.
- Do not eat undercooked meat, particularly camel meat.

For more information, see [http://www.who.int/csr/disease/coronavirus\\_infections/MERS\\_CoV\\_Update\\_09\\_May\\_2014.pdf](http://www.who.int/csr/disease/coronavirus_infections/MERS_CoV_Update_09_May_2014.pdf)

### *If you are sick:*

- Cover your mouth with a tissue when you cough or sneeze, and throw the tissue in the trash.
- Avoid contact with other people to keep from infecting them. This might mean delaying your travel until you are well.
- Call a doctor if you develop a fever and symptoms of lower respiratory illness, such as cough or shortness of breath, within 14 days after traveling from countries in or near the Arabian Peninsula.\* You should tell the doctor about your recent travel before you go in for an appointment.
- Tell people who have been in close contact with you to monitor their health for 14 days after the last time they were around you.
- They should call a doctor and tell them about your illness and travel history and their current symptoms.
- If you get sick while you are traveling, see Getting Health Care Abroad for information about how to locate medical services overseas.

**CLINICIAN INFORMATION:**

Health care providers should be alert to patients who develop severe acute lower respiratory illness (e.g., requiring hospitalization) within 14 days after traveling from countries in the Arabian Peninsula\* or neighboring countries, excluding those who transited at airports without entering the countries.

- Take precautions to reduce contact between any patient seeking care for symptoms consistent with MERS-CoV infection and other patients and staff. For more information, see CDC's MERS Information for Health Care Providers.
- Consider other more common causes of respiratory illness, such as influenza.
- Evaluate patients using CDC's case definitions and guidance.
- Immediately report patients with unexplained respiratory illness and who meet CDC's criteria for "patient under investigation (PUI)" to CDC through the state or local health department.
- Collect specimens for MERS-CoV testing from all PUIs.
- Contact your state or local health department if you have any questions.
- See additional recommendations and guidance on CDC's MERS website.
- Health departments with questions should contact CDC's Emergency Operations Center (770-488-7100)

**MERS IN THE U.S.**

The MERS situation in the U.S. represents a very low risk to the general public in this country. CDC and other public health partners continue to investigate and respond to the changing situation to prevent the spread of MERS-CoV in the U.S. We recognize the potential for MERS-CoV to spread further and cause more cases globally and in the United States.

In preparation for this, we have

- Enhanced surveillance and laboratory testing capacity in states to detect cases
- Developed guidance and tools for health departments to conduct public health investigations
- Provided recommendations for healthcare infection control and other measures to prevent disease spread
- Provided guidance for flight crews, Emergency Medical Service (EMS) units at airports, and U.S. Customs and Border Protection (CPB) officers about reporting ill travelers to CDC
- Disseminated up-to-date information to the general public, international travelers, and public health partners

**First U.S. Case (Indiana)**

On May 2, 2014, the first U.S. case of MERS was confirmed in a traveler from Saudi Arabia to Indiana, via London and Chicago. The patient is a healthcare worker who lives and works in Saudi Arabia. He was isolated in a hospital during the course of illness and later discharged, having fully recovered. Public health officials have contacted healthcare workers, family members, and travelers who had close contact with the patient. More about the investigation related to the Indiana case.

**Second U.S. Case (Florida)**

On May 11, 2014, a second U.S. imported case of MERS was confirmed in a traveler who also came to the U.S. from Saudi Arabia. This patient is also a healthcare worker who traveled from Saudi Arabia to Orlando via London, Boston and Atlanta. On May 18, health officials verified that the patient tested negative for active MERS-CoV infection, was no longer symptomatic, and posed no threat to the community; the patient was considered to be fully recovered and was discharged from the hospital.