

**Mission:**

To protect, promote & improve the health of all people in Florida through integrated state, county & community efforts.



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Governor

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State Surgeon General & Secretary

**Vision:** To be the Healthiest State in the Nation

## Key Points – Middle East Respiratory Syndrome Coronavirus (MERS-CoV)

May 13, 2014

*Information in this document is subject to change, and newer versions supersede this document*

On Monday May 12, the Florida Department of Health (DOH) confirmed the first Florida case of Middle East Respiratory Syndrome Coronavirus (MERS-CoV) infection in a patient at an Orlando hospital. The patient is a healthcare worker who resides and works in Saudi Arabia and is visiting the United States. The patient first flew to London and then through Boston and Atlanta, arriving in Orlando on May 1. The patient was hospitalized on May 9 and was placed in isolation once MERS-CoV was suspected. Efforts are underway to make contact with any individuals who had close contact with the patient during travel or in the Orlando area. There is no evidence the case is linked to the first case of MERS identified in Indiana and confirmed on May 2, 2014.

### Situation Update

- The first two U.S. cases of MERS represent a very low risk to the general public in this country.
- At this time, in the United States no additional MERS cases have been identified, in association with these two cases or otherwise.
- Our guidance and recommendations may change as the situation evolves and we learn more.
- CDC advises that people protect themselves from respiratory illnesses by washing their hands often, using a tissue when coughing or sneezing, avoiding touching their face with unwashed hands, staying away from ill people, and disinfecting frequently touched surfaces.

### MERS and MERS-CoV

- Middle East Respiratory Syndrome (MERS) is the illness caused by Middle East Respiratory Syndrome Coronavirus (MERS-CoV).
- MERS-CoV is different from other coronaviruses that have been found to infect people.
  - MERS-CoV is not the same coronavirus that caused SARS in 2003. However MERS-CoV has caused severe acute respiratory illness and pneumonia in many reported cases.
- We don't know where the virus came from or exactly how it spreads.
  - Scientists are investigating clusters of MERS in countries in and near the Arabian Peninsula<sup>1</sup> to learn how the initially infected people (index cases) were exposed to the virus.
  - MERS-CoV has been shown to spread among family members and to care takers in hospital settings, where there has been close contact, but there is no evidence of sustained spread in community settings.
  - In efforts to determine where the virus may have come from, studies have been done to test animals, including camels, for evidence of MERS-CoV infection.
    - A recent study detected evidence of MERS-CoV (gene sequences) in three out of 14 camels on a farm, linked to two confirmed human infections from Qatar.
    - MERS-CoV gene sequences have also been identified from dromedary camels in Saudi Arabia and Egypt, some associated with human cases.
    - Other studies have shown that camels from several countries, including Egypt, Oman, and Spain, had antibodies to MERS-CoV. One study identified a limited gene sequence for MERS-CoV in a bat in Saudi Arabia. This indicates that the animals had previous exposure to MERS-CoV or

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another closely related virus. More information is needed to define the role that camels, bats, and other animals may play in possible transmission of MERS-CoV.

- In other countries affected by MERS:
  - Limited human-to-human spread has been reported, usually after close and prolonged contact, such as caring for or living with an infected person. The few instances where human to human spread has been identified have most frequently occurred among healthcare workers caring for MERS patients.
  - There is no definitive evidence of sustained spreading in community settings.

### **Florida Department of Health Response**

- FDOH and hospital officials are investigating and responding to the situation by:
  - Reviewing appropriate infection control measures being taken by the hospital.
  - Interviewing the healthcare staff who had close contact<sup>2</sup> with the patient and family members to obtain detailed information on their exposures, collecting and testing specimens from them, and monitoring their health for relevant respiratory symptoms related to MERS-CoV infection.
  - Identifying other people who had close contact<sup>2</sup> with the patient, and
    - interviewing them
    - monitoring them to see if they become ill
    - collecting and testing specimens from them, if needed
    - requesting that they monitor their health and seek care if they develop symptoms
- CDC in conjunction with state health departments are conducting airline contact tracing to identify and notify U.S. travelers who may have been exposed to the U.S. imported case during that person's travel.
  - CDC will also provide information to international partners about any non-U.S. citizens who are identified through contact tracing.
- Contact investigations are conducted to:
  - Refer any contacts, such as fellow passengers or crew, who are identified with fever or signs of respiratory illness, for medical evaluation, laboratory testing, and medical care, as needed.
  - Provide information to exposed passengers and crew so they can recognize any symptoms of illness, then isolate themselves, if needed, and seek medical care.
  - Determine whether MERS-CoV may have spread on the flights and which passengers were at risk.

### **Symptoms**

- Most people confirmed to have MERS-CoV infection have had severe acute respiratory illness.
  - Symptoms included fever, cough, and shortness of breath.
  - Many of them had pneumonia.
  - Some people also had gastrointestinal symptoms, including diarrhea.
  - Some have had kidney failure.
  - More than 30% of them died.
- Some people did not have any symptoms, or had only mild respiratory illness; they recovered.

### **Risks**

- Based on the information we have so far, people with pre-existing health conditions (comorbidities) or weakened immune systems may be more likely to become infected with, or have a severe case of, MERS.
  - Comorbidities from reported cases for which we have information have included diabetes; cancer; and chronic lung, heart, and kidney disease.

### **Transmission**

- In some cases, infected people have spread the virus to others through close contact, such as to people who were caring for or living with them. There is no definitive evidence of sustained spreading of MERS-CoV in the community.
- Infected people have been shown to spread MERS-CoV to others in healthcare settings. This has happened in hospitals in Saudi Arabia, France, Jordan, UAE, and Qatar.
  - A large MERS outbreak occurred April through May 2013 in eastern Saudi Arabia and involved 23 confirmed cases in four healthcare facilities.
  - Additional hospital outbreaks are currently ongoing in Saudi Arabia and the United Arab Emirates.

- Most people who had close contact<sup>2</sup> with people who had MERS-CoV infection did not get infected or ill.
  - This information is based on public health investigations of cases in Jordan, Saudi Arabia, the United Kingdom (UK), France, and Germany.
  - To better understand the risk for infection, additional information is needed about the extent of exposures to infected people, frequency of community and household contacts, and contacts before and during illness.
  - CDC, FDOH, and public health are working with our partners to carefully evaluate the two cases of MERS in the U.S. Through this public health investigation, we hope to gain a better understanding of the virus, risk of transmission, and the spectrum of illness it causes.
- All reported cases have been linked to eight countries in the Arabian Peninsula<sup>1</sup>: Saudi Arabia, Qatar, Jordan, the United Arab Emirates (UAE), Oman, Kuwait, Yemen, and Lebanon.
  - Most infected people either lived in the Arabian Peninsula or recently traveled from the Arabian Peninsula before they became ill.
  - A few people became infected with MERS-CoV after having close contact<sup>2</sup> with an infected person who had recently traveled from the Arabian Peninsula.
- Public health agencies continue to investigate clusters of cases in several countries to better understand how MERS-CoV spreads from person-to-person.

### **Vaccine and Treatment**

- There is no vaccine to prevent MERS-CoV infection at the present time.
- There is no specific antiviral treatment recommended for MERS-CoV infection; medical care can help relieve symptoms. For severe cases, current treatment includes care to support vital organ functions.
- CDC has participated in an interagency working group led by the U.S. National Institutes of Health (NIH) to address the possibility of antiviral treatment, vaccine, and other possible treatments for MERS-CoV infection.
  - NIH has the lead in exploring possibilities for a MERS-CoV vaccine.
  - NIH has supported and conducted foundational work on potential SARS vaccines; this work may be helpful for developing a MERS-CoV vaccine.
- The Food and Drug Administration (FDA) has not approved specific antiviral treatment for people with MERS-CoV infection. Also, CDC, NIH, FDA, and the World Health Organization (WHO) do not currently have recommendations for specific antiviral treatment.

### **What CDC Has Done to Prepare for MERS Importations to the United States**

- CDC continues to closely monitor the MERS situation globally and work with the World Health Organization, health departments and other partners to understand the risks of this virus to the public's health. CDC and FDOH recognize the potential for MERS-CoV to spread further and cause more cases globally and in the United States. In preparation for this, the following has occurred:
  - Enhanced surveillance and laboratory testing capacity in states to detect cases.
  - Developed guidance and tools 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 and health care partners about reporting ill travelers to FDOH.
  - Disseminated up-to-date information to the general public, international travelers, and public health partners.

### **What the General Public Should do to Protect Themselves**

- CDC and FDOH routinely advises that people help protect themselves from respiratory illnesses by taking everyday preventive actions like washing their hands often; avoiding close contact with people who appear sick; avoiding touching the eyes, nose, and mouth with unwashed hands; and disinfecting frequently touched surfaces.

### **What Recent Travelers From the Arabian Peninsula Should Do**

- 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<sup>1</sup>, 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.

### **What Close Contacts<sup>2</sup> of an Ill Traveler From the Arabian Peninsula Should Do**

- If you have had close contact<sup>2</sup> 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.

### **What People Who Have Had Close Contact<sup>2</sup> With a Confirmed or Probable Case Should Do**

- If you have had close contact<sup>2</sup> with someone who has a probable or confirmed MERS-CoV infection, you should contact a healthcare provider for an evaluation and mention your recent close contact with someone known to be infected with MERS-CoV. 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 37.7° Celsius, 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.

### **Travel**

- At this time, CDC does not recommend that anyone change their travel plans.
- CDC recommends that travelers stay informed by visiting [www.cdc.gov/travel](http://www.cdc.gov/travel) and following [@CDCtravel](https://twitter.com/CDCtravel) for updates and the latest advice.
  - The travel notice for MERS-CoV was upgraded to a level 2 alert. The travel notice advises people traveling to the Arabian Peninsula<sup>1</sup> for health care work to follow CDC's recommendations for infection control and other travelers to the Arabian Peninsula to take general steps to protect their health.
- CDC is continuing to do surveillance by working with our partners at U.S. ports of entry, including Customs and Border Protection, airlines, and Emergency Medical Service units at airports.
  - CDC has developed guidance to educate partners on the symptoms to watch out for and how to report illnesses to CDC's quarantine station staff.
    - CDC is reaching out to these partners to remind them about what to look for and report to CDC.
  - Together with partners at ports of entry, CDC staff continue to assess ill travelers returning from affected areas who have been reported to CDC.
    - The assessment helps determine whether the ill travelers are at risk for MERS-CoV infection and whether any additional public health actions are needed, such as a referral to a healthcare provider or public health department for evaluation and testing.
    - CDC is advising people who develop 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<sup>1</sup> to call ahead to a healthcare provider and mention their recent travel.
- CDC is also educating travelers to monitor their own health after returning from countries in or near the Arabian Peninsula<sup>1</sup>.
  - Electronic monitors in airport international arrival areas direct people to information about MERS-CoV.
  - Informational cards are provided to ill travelers, which recommend that they monitor their symptoms, call a doctor to make an appointment, and take steps to protect others from infection.
  - [Health Advisory posters about MERS](#) displayed for travelers heading to the Arabian Peninsula to raise awareness about MERS and advise travelers to follow general steps to protect their health.

### **Where people get more information about MERS**

- Florida Department of Health: <http://flhealth.gov/mers>
- CDC will continue to post new information about MERS on the following websites as it becomes available:

- CDC MERS website: [www.cdc.gov/coronavirus/mers/index.html](http://www.cdc.gov/coronavirus/mers/index.html)
- Travelers' Health: <http://wwwnc.cdc.gov/travel/notices/alert/coronavirus-arabian-peninsula-uk>
- WHO coronavirus infections website: [www.who.int/csr/disease/coronavirus\\_infections/en/index.html](http://www.who.int/csr/disease/coronavirus_infections/en/index.html)

<sup>1</sup> Countries in and near the Arabian Peninsula include: Bahrain, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Palestinian territories, Qatar, Saudi Arabia, Syria, the United Arab Emirates (UAE), and Yemen.

<sup>2</sup> 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.