



Florida Department of Health

Middle East Respiratory Syndrome (MERS) Guidance

Focus Area: Surveillance and Investigation

Guidance document number 2014-1

Middle East Respiratory Syndrome (MERS) Surveillance, Investigation, and Reporting Guidance for County Health Departments (CHDs)

Version 1.0 May 20, 2014

Note: This document may become outdated as situations change. Documents on this topic dated after May 20, 2014 supersede this one. This document will be posted on the Bureau of Epidemiology website <http://www.flhealth.gov/mers>

Summary:

- **Surveillance:** Counties should apply the definition of patient under investigation (PUI) for MERS to determine if laboratory testing and public health investigation is needed.
- **Investigations:** Investigations should occur for individuals meeting the definition of PUI for MERS within the same day of CHD notification.
 - County epidemiology staff should alert their regional epidemiologist and laboratory liaison of all PUI for MERS.
 - Urgent or weekend laboratory testing must be arranged *prior* to specimen submission to the Bureau of Public Health Laboratories (BPHL).
- **Reporting Patients Under Investigation (PUI) and Cases:** PUI or persons meeting the confirmed or probable case definition for Middle East Respiratory Syndrome (MERS) should be entered into Merlin **within twenty-four hours (including on weekends)**.
- **CHD laboratory results notification process for MERS:** CHDs will be notified of positive and negative laboratory results for MERS from the BPHL via Merlin ELR Task List. Results will be available within 1-2 business days unless otherwise notified.

Background:

The Middle East respiratory syndrome coronavirus (MERS-CoV) was first reported to cause human infection in September 2012. As of May 20, 2014, greater than 600 laboratory-confirmed cases of MERS-CoV infection have been reported by World Health Organization (WHO), including over 145 deaths. All reported cases have been linked through travel or residence to the Arabian Peninsula.

Since mid-March 2014, the frequency with which cases of MERS have been reported has increased, with the majority of recent cases reported from Saudi Arabia and United Arab Emirates (UAE). In addition, the frequency with which travel-associated MERS cases have been reported and the number of countries that have reported them to the WHO have also increased. Public health investigations are ongoing to determine the reason for the increase in cases. The first cases of MERS in the United States were identified in mid-May among travelers from Saudi Arabia that traveled to Indiana and Florida. The purpose of this document is to provide guidance to county health department staff on the surveillance, investigation, and reporting of MERS in Florida. For the latest situation updates visit www.cdc.gov/coronavirus/mers/

1. Surveillance for MERS:

A patient under investigation (PUI) is a person with the following characteristics:

A. Clinical: History of fever AND respiratory illness **of potentially infectious origin** that may include pneumonia or acute respiratory distress syndrome.

AND hospitalization for respiratory illness

AND ONE or MORE of the following:

- history of travel to or residency in countries in or near the Arabian Peninsula² within 14 days before symptom onset;
OR
- close contact³ with a symptomatic person who developed fever and acute respiratory illness (not necessarily pneumonia) within 14 days after traveling from countries in or near the Arabian Peninsula²;
OR
- is 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 infection is being evaluated, in consultation with state and local health departments.
OR
- close contact³ with a confirmed or probable case of MERS.

OR

B. Clinical: history of fever OR respiratory illness of potentially infectious origin

AND sought health care (hospitalization not required)

AND ONE or MORE of the following:

- a history of health care employment¹ in or near the Arabian Peninsula² within 14 days before symptom onset
OR
- a history of hospital admission in or near the Arabian Peninsula² within 14 days before symptom onset
OR
- close contact³ with a confirmed or probable case of MERS-CoV.

Patients with lower respiratory illness should also be evaluated for common causes of community-acquired pneumonia³, guided by clinical presentation and epidemiologic and surveillance information. For these patients, testing for MERS-CoV and other respiratory pathogens can be done simultaneously. Positive results for another respiratory pathogen (e.g., influenza) should not necessarily preclude testing for MERS-CoV because co-infection can occur.

The MERS PUI criteria are subject to change based on the volume of testing requests and other factors.

1. Travelers who were hospitalized or worked as health care providers while traveling to the Arabian Peninsula region may be at increased risk for MERS-CoV exposure.
2. Countries considered in or near the Arabian Peninsula: Bahrain, Iraq, Iran, Israel, Jordan, Kuwait, Lebanon, Oman, Palestinian territories, Qatar, Saudi Arabia, Syria, the United Arab Emirates (UAE), and Yemen.
3. 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.

MERS Case Definition:

Confirmed: A confirmed case is a person with laboratory confirmation¹ of MERS-CoV infection.

Probable: A probable case is a PUI with absent or inconclusive² laboratory results for MERS-CoV infection who is a close contact³ of a laboratory-confirmed MERS-CoV case.

Suspect: A person that meets the definition of a PUI, with MERS-CoV laboratory tests pending.

1. Confirmatory laboratory testing requires a positive PCR on at least two specific genomic targets or a single positive target with sequencing on a second. Confirmatory testing is performed by CDC.
2. Examples of laboratory results that may be considered inconclusive include a positive test on a single PCR target, a positive test with an assay that has limited performance data available, or a negative test on an inadequate specimen. Testing performed by BPHL.
3. 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.

2. Investigations of PUI for MERS:

- County epidemiology staff should investigate each report of possible MERS to determine if the PUI for MERS criteria are met.
- Counties should contact their Regional Epidemiologist and Laboratory Liaison if a PUI is identified or to ask questions. Case investigations should occur within twenty-four hours of CHD notification.
- Conduct patient/proxy or healthcare provider interviews and record reviews to obtain essential information, which includes: history of present illness, medical history, travel dates, risk factors, differential diagnoses, microbiology test results.
- Complete the FDOH MERS PUI form: <http://www.flhealth.gov/mers>

Infection Control Considerations

- While a PUI for MERS is receiving healthcare, it is important that standard, contact, and airborne precautions are used.
- See recommendations: <http://www.cdc.gov/coronavirus/mers/infection-prevention-control.html>

Management of Cases and PUI

- A *PUI* may be discharged before MERS is ruled out. Decisions to discharge a PUI for MERS is up to the treating physician.
 - The patient should be provided surgical masks and asked to isolate themselves at home until fever free for 24 hours without antipyretic medication (i.e. acetaminophen, ibuprofen).
 - Holding a PUI at a healthcare facility should be done to provide necessary clinical care, not for the purpose of the public health investigation.
 - Close contacts to a PUI for MERS should self-monitor for symptoms, isolation is not necessary if they remain asymptomatic.
 - Close contacts who develop illness should also be managed as a PUI for MERS, specimens should be collected, and they should be isolated at home or while seeking healthcare until MERS testing at BPHL is completed. Home care guidelines: <http://www.cdc.gov/coronavirus/MERS/hcp/home-care.html>
- For *confirmed* MERS cases the decision to discharge is based on public health and medical assessment with the Bureau of Epidemiology (BOE), including presence of symptoms and multiple negative specimens (preferably sputum).

Contact investigation for confirmed MERS cases (*guidance to be developed*)
<http://www.cdc.gov/coronavirus/mers/interim-guidance.html>

3. Laboratory Testing and Specimen Collection

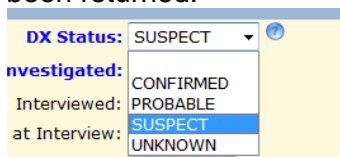
- If PUI criteria are met, contact your regional epidemiologist and laboratory liaison ([Map](#)) or the after-hours (BOE) on-call epidemiologist (850-245-4401), to arrange for MERS testing at BPHL.
- PUI's with the following criteria will be prioritized for laboratory testing: PUI that are a healthcare worker with patient contact in a country known to have MERS cases, or a PUI known close contact of a confirmed or probable MERS case.
- To increase the likelihood of detecting MERS-CoV CDC recommends collecting multiple specimens from different sites. Ideally, ALL the following specimens should be collected and submitted to BPHL for PUI.
 - Collect the following specimens for each PUI:
 - **PRIORITY** Lower Respiratory: sputum (induced if necessary), bronchial alveolar lavage, tracheal aspirate, or pleural fluid in a sterile container.
 - Upper Respiratory: nasopharyngeal AND oropharyngeal swab (which can be placed in the same tube of viral transport medium). Nasal washings are not acceptable.
 - Serum (RED top or TIGER top tube), and
 - Stool or rectal swab (stool is preferred to rectal swabs).
- Specimens can be shipped overnight for weekday arrival to BPHL in Jacksonville, Miami, or Tampa following notification to the appropriate BPHL.
- Shipments arriving on the weekend must be pre-authorized by BPHL and the Bureau of Epidemiology.
- Specimens can be sent using category B shipping containers. Additional information is available at <http://www.cdc.gov/coronavirus/mers/guidelines-clinical-specimens.html>

Notification Process of Laboratory Results for Specimens Tested by BPHL:

- In most circumstances results will be available in 1-2 business days.
- Final laboratory results (positive or negative) will be sent to counties via their **Merlin ELR Task List** in the same manner they would identify new positive results of other reportable diseases tested at BPHL.

4. Reporting MERS PUI and cases in Merlin:

- Individuals meeting the confirmed, probable, and PUI (suspect) case definition for MERS should be entered into Merlin.
- PUI should be entered **within twenty-four hours of CHD notification.**
- PUI should be listed as SUSPECT under the DX Status until the laboratory results have been returned.

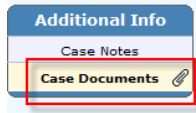


The screenshot shows a form with the following fields and options:

DX Status:	SUSPECT
Investigated:	CONFIRMED
Interviewed:	PROBABLE
at Interview:	SUSPECT
	UNKNOWN

- Please attach ALL BPHL results to the Merlin case created for each PUI.
- If BPHL results are negative, the PUI record can be marked for deletion.
- If BPHL results are positive, the case status will need to be updated and the complete MERS case report form completed.

- Scan and attach under the case documents section the FDOH MERS PUI form <http://www.flhealth.gov/mers> as soon as the initial interview information (including which specimens have been collected for submission to BPHL) is complete. The laboratory results section of the form can be updated when results are final.



5. Resources

Additional guidance and key points may be found on the FDOH MERS website:

<http://www.flhealth.gov/mers>

For further information please contact BOE at 850-245-4401.