

**New Jersey Department of Health**  
**Surveillance Criteria and Testing for Middle East Respiratory Syndrome (MERS)**

Protocol for Healthcare Providers and Local Health Departments  
December 14, 2015

**Key steps in case screening for Middle East Respiratory Syndrome (MERS)**

- 1. Confirm that the case meets current SURVEILLANCE CRITERIA**
- 2. Ensure implementation of CONTROL MEASURES**
- 3. Ensure COLLECTION OF SPECIMENS for diagnostic testing**
- 4. Ensure NOTIFICATION procedures are followed**
- 5. Ensure completion of the MERS PERSON UNDER INVESTIGATION FORM**

**SURVEILLANCE CRITERIA**

**Healthcare Providers**

To rapidly detect the importation of MERS-CoV, NJDOH request providers report patients meeting one of the following criteria.

1. A patient with fever<sup>1</sup> AND pneumonia or acute respiratory distress syndrome (based on clinical or radiologic evidence) **AND one of more of the following:**
  - a. History of travel from countries in or near the Arabian Peninsula<sup>2</sup> within 14 days before symptom onset **OR**
  - b. Close contact<sup>3</sup> with a symptomatic traveler who developed fever<sup>1</sup> and acute respiratory illness (not necessarily pneumonia) within 14 days after traveling from countries in or near the Arabian Peninsula **OR**
  - c. A member of a cluster of patients with severe acute respiratory illness (e.g., fever<sup>1</sup> and pneumonia requiring hospitalization) of unknown etiology in which MERS-CoV is being evaluated by state or local health officials
2. A patient with fever<sup>1</sup> AND symptoms of respiratory illness (not necessarily pneumonia; e.g., cough, shortness of breath) **AND** history of being in a healthcare facility (as a patient, worker, or visitor) within 14 days before symptom onset in countries in or near the Arabian Peninsula<sup>2</sup> in which recent healthcare associate cases of MERS have been identified, **OR**
3. Fever<sup>1</sup> **OR** symptoms of respiratory illness (not necessarily pneumonia; e.g. cough, shortness of breath) **AND** close contact<sup>3</sup> with a confirmed MERS case while the case was ill.

1. Fever ( $\geq 100.4^{\circ}\text{F}$ ) 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; Kuwait; Lebanon; Oman; Qatar; Saudi Arabia; Syria; the United Arab Emirates; and Yemen.
3. Close contact is defined as: a) being within approximately 6 feet (2 meters) or within the room or care area for a prolonged period of time (e.g., healthcare personnel, household members) while not wearing recommended personal protective equipment (i.e., gowns, gloves, respirator, eye protection—see <http://www.cdc.gov/coronavirus/mers/infection-prevention-control.html>); or b) having direct contact with infectious secretions (e.g., being coughed on) while not wearing recommended personal protective equipment (i.e., gowns, gloves, respirator, eye protection—see <http://www.cdc.gov/coronavirus/mers/infection-prevention-control.html>). Data to inform the definition of close contact are limited. At this time, brief interactions, such as walking by a person, are considered low risk and do not constitute close contact.

Health care entities should put in place activities to detect suspect cases early (e.g., signage, triage assessments) and isolate all suspect cases immediately upon suspicion.

Standard, contact, and airborne precautions are recommended for management of hospitalized patients with known or suspected MERS-CoV infection, based on CDC's case definition. Information regarding room placement, personal protective equipment and environmental cleaning is available at:

<http://www.cdc.gov/coronavirus/mers/infection-prevention-control.html>

Appropriate measures should be used to prevent MERS-CoV from spreading in homes and communities and can be found at:

<http://www.cdc.gov/coronavirus/mers/hcp/home-care.html>

These recommendations will be updated as additional information on MERS, its transmissibility, epidemiology, available treatment, or vaccine options become available. These interim recommendations are based upon current available information.

## **COLLECTION AND TRANSPORT OF CLINICAL SPECIMENS**

The New Jersey Public Health and Environmental Laboratories (PHEL) has been approved to test for Middle East Respiratory Syndrome Coronavirus (MERS-CoV) using CDC's rRT-PCR assay. Approval for testing will be granted only after clinical and epidemiologic criteria of the suspect case is reviewed by the local and state health departments.

Lower respiratory specimens (i.e., bronchoalveolar lavage, tracheal aspirate, pleural fluid, sputum) are preferred, but collecting nasopharyngeal and oropharyngeal (NP/OP) specimens, as well as stool and serum, are strongly recommended. The type of specimens requested will vary for each case depending upon the length of time between symptom onset and specimen collection. It is advisable for respiratory specimens to be collected as soon as possible after symptoms begin – ideally within 7 days of symptom onset and before antiviral medications are administered. However, if more than a week has passed since symptom onset and the patient is still symptomatic, respiratory samples should still be collected, especially lower respiratory specimens since respiratory viruses can still be detected by rRT-PCR. If preliminary results at PHEL are positive or inconclusive, specimens will be sent to CDC for additional testing and/or confirmation.

Additional information on specimen collection, handling and testing is available at:

<http://www.cdc.gov/coronavirus/mers/guidelines-clinical-specimens.html>

Appropriate infection control procedures should be followed when collecting samples and can be found at:

<http://www.cdc.gov/coronavirus/mers/guidelines-clinical-specimens.html>

The SRD-1 form (available at <http://www.state.nj.us/health/forms/srd-1.dot>) should be completely filled out for **each** specimen that is sent. Label the *vial containing the specimen* with

patient's first and last name, date of birth, medical record number, date of collection, and specimen type. Incorrectly labeled samples may be denied for testing.

The timeframe in which testing is conducted by PHEL or CDC will be determined on a case-by-case basis. **No specimen will be tested by PHEL until the case has been reviewed and approved by the CDS staff.**

NOTE: If PHEL receives a specimen without CDS review and approval, PHEL will hold the specimen and contact CDS.

## **Shipping**

CDS staff will carefully evaluate each report to determine the immediacy in which the specimen should be transported and tested. Samples may be shipped to PHEL via commercial carrier, private courier or hand carried. If CDS staff feels that immediate testing of the sample is warranted, the local health department and hospital will be asked to assist in transporting specimens to PHEL. In most cases CDS will ask the facility or LHD to hand carry specimens to PHEL on the same day the specimen was approved for testing. Directions to PHEL can be found at: <http://www.nj.gov/health/phel/faq.shtml>. If CDS determines the case to be a low priority, commercial carriers can be used to ship samples, which should be handled as Biologic Substance, Category B. When shipping via commercial carrier you must abide by IATA shipping regulations which can be found at [www.iata.org](http://www.iata.org) or <http://www.fmcsa.dot.gov/regulations/hazardous-materials>. Specific specimens storage instructions can be found in the following document on the CDC website: (<http://www.cdc.gov/coronavirus/mers/guidelines-clinical-specimens.html>)

## **NOTIFICATION**

### **Healthcare Providers**

Cases meeting the above surveillance criteria should be reported **IMMEDIATELY** to the local health department (LHD) where the patient resides. If patient residence is unknown, report to your own local health department. Local health departments are available 24/7/365. Contact information for local health departments during business hours can be found at: [www.localhealth.nj.gov](http://www.localhealth.nj.gov). Contact information for local health departments after business hours or on weekends can be found at: [http://nj.gov/health/lh/documents/lhd\\_after\\_hours\\_emerg\\_contact\\_numbers.pdf](http://nj.gov/health/lh/documents/lhd_after_hours_emerg_contact_numbers.pdf).

If LHD personnel are unavailable, healthcare providers should report the case to the New Jersey Department of Health (NJDOH), Communicable Disease Service (CDS) at 609-826-5964, Monday through Friday 8:00 AM - 5:00 PM. On weekends, evenings and holidays, CDS can be reached at (609) 392-2020.

### **Local Health Departments**

When a local health department receives a report regarding a patient meeting the MERS surveillance criteria, the protocols contained within this document for screening, isolation, and

collection of lab specimens should be followed. Information should be communicated **IMMEDIATELY** to NJDOH CDS at 609-826-5964, Monday through Friday 8:00 AM - 5:00 PM. On weekends, evenings and holidays, CDS can be reached at (609) 392-2020.

The healthcare provider or local health department should complete the (MERS) **PERSON UNDER INVESTIGATION (PUI) FORM** (please see last page of this document). Completed forms should be faxed to CDS at 609-826-5972. This form will be reviewed by CDS staff who will make the final determination if the case meets surveillance criteria and if a specimen is required for testing. In addition to the PUI Form, details regarding the case should be entered into the Communicable Disease Reporting and Surveillance System (CDRSS) under “MIDDLE EAST RESPIRATORY SYNDROME CORONAVIRUS (MERS-COV)”.

## **REFERENCES**

NJDOH – General Information Page

<http://nj.gov/health/cd/mers/index.shtml>

CDC – General Information Page

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

CDC – Information on Infection Control in Health Care Setting

<http://www.cdc.gov/coronavirus/mers/infection-prevention-control.html>

CDC – Information for Laboratories

<http://www.cdc.gov/coronavirus/mers/laboratories.html>

## Middle East Respiratory Syndrome (MERS) Patient Under Investigation (PUI) Short Form

For Patients Under Investigation (PUIs), complete and send this form to  
[influenzaadvisorygroup@doh.state.nj.us](mailto:influenzaadvisorygroup@doh.state.nj.us) or fax to 609-826-5972.

**Today's Date:** \_\_\_\_\_ **STATE ID:** \_\_\_\_\_ **STATE:** \_\_\_\_\_ **COUNTY:** \_\_\_\_\_

**Interviewers: Name:** \_\_\_\_\_ **Phone:** \_\_\_\_\_ **Email:** \_\_\_\_\_

**Sex:**  M  F **Age:** \_\_\_\_\_  yr  mo **Residency:**  US resident  non-US resident, country: \_\_\_\_\_

**Date of symptom onset:** \_\_\_\_\_ **Symptoms (mark all that apply):**  Fever  Chills  Cough  Sore throat

Shortness of breath  Muscle aches  Vomiting  Diarrhea  Other: \_\_\_\_\_

**In the 14 days before symptom onset did the patient (mark all that apply):**

Have close contact<sup>1</sup> with a known MERS case?

Have close contact<sup>1</sup> with an ill traveler from the Arabian Peninsula/neighboring country<sup>2</sup>? If Yes, countries: \_\_\_\_\_

Visit or work in a health care facility in the Arabian Peninsula/neighboring country<sup>2</sup>? If Yes, countries: \_\_\_\_\_

Travel to/from the Arabian Peninsula/neighboring country<sup>2</sup>? If Yes, countries: \_\_\_\_\_

Date of travel **TO** this area: \_\_\_\_\_ Date of travel **FROM** this area: \_\_\_\_\_

**Is the patient a member of a severe respiratory illness cluster of unknown etiology?**  Yes  No  Unknown

**Is the patient a health care worker (HCW)?**  Yes  No  Unknown If Yes, did the patient work as a HCW in/near a country in the Arabian Peninsula<sup>2</sup> in the 14 days before symptom onset?  Yes  No  Unknown If Yes, countries: \_\_\_\_\_

**Does the patient have any comorbid conditions? (mark all that apply):**  None  Unknown  Diabetes  Cardiac disease  Hypertension

Asthma  Chronic pulmonary disease  Immunocompromised  Other: \_\_\_\_\_

	Yes	No	Unknown
<b>Was the patient:</b> Hospitalized? If Yes, <i>admission date:</i> _____			
Admitted to the Intensive Care Unit (ICU)?			
Intubated?			
<b>Did the patient die?</b> If Yes, <i>date of death:</i> _____			
<b>Did the patient have clinical or radiologic evidence of pneumonia?</b>			
<b>Did the patient have clinical or radiologic evidence of acute respiratory distress syndrome (ARDS)?</b>			

**General non-MERS-CoV Pathogen Laboratory Testing (mark all that apply)**

Pathogen	Pos	Neg	Pending	Not Done	Pathogen	Pos	Neg	Pending	Not Done
Influenza A PCR					Rhinovirus and/or Enterovirus				
Influenza B PCR					Coronavirus ( <u>not</u> MERS-CoV)				
Influenza Rapid Test					<i>Chlamydomphila pneumoniae</i>				
RSV					<i>Mycoplasma pneumoniae</i>				
Human metapneumovirus					<i>Legionella pneumophila</i>				
Parainfluenzavirus					<i>Streptococcus pneumoniae</i>				
Adenovirus					Other: _____				

**MERS-CoV rRT-PCR Testing (mark all that apply)**

Specimen Type	Date Collected	Positive	Negative	Equivocal	Pending	Not Done
Sputum						
Bronchoalveolar lavage (BAL)						
Tracheal Aspirate						
NP <sup>3</sup> OP <sup>3</sup> NP/OP <sup>3</sup> ( <i>circle one</i> )						
Serum						
Other: _____						

**For CDC ONLY:**

Date Collected	Positive	Negative	Pending	Not Done
<b>MERS-CoV Serology Testing</b>				

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<sup>2</sup> 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.

<sup>3</sup> NP = nasopharyngeal, OP = oropharyngeal (throat swab)