

What is Middle East Respiratory Syndrome (MERS)

Middle East Respiratory Syndrome (MERS) is a respiratory illness caused by a virus called Middle East Respiratory Syndrome Coronavirus, or MERS-CoV. It has been reported having a wide range of clinical illness ranging from asymptomatic to having severe acute respiratory illness resulting in death, with most reported cases having more severe illness. MERS cases have been reported among children and adults of all ages, though most cases have been found in older adults. It is thought to spread from an infected person's respiratory secretions and likely came from an animal source in the Arabian Peninsula. In addition to humans, MERS-CoV has been found in camels. Countries considered in the Arabian Peninsula 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.

Clinical Presentation & Disease Summary

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| Transmission: | <ul style="list-style-type: none"> Exact route of transmission remains unclear Zoonotic transmission: Direct or indirect contact with infected dromedary camels Human-to-human transmission: possible and has occurred predominately among close contacts and in health care settings. Outside of the healthcare setting, there has been no sustained human-to-human transmission documented. |
| Incubation Period: | <ul style="list-style-type: none"> 2-14 days after exposure to infected person or camel Most patients develop symptoms approximately 5 days after exposure |
| Signs and Symptoms: | <ul style="list-style-type: none"> Fever, dyspnea, non-productive cough, chills/rigors, headache, myalgia Other signs and symptoms can include: sore throat, coryza (runny nose and/or sneezing), productive cough, dizziness, nausea and vomiting, diarrhea, and abdominal pain. Chest radiographic findings: might include unilateral or bilateral patchy densities or opacities, interstitial infiltrates, consolidation, or pleural effusions. |
| Complications: | <ul style="list-style-type: none"> Severe complications include hospitalization, admission to the ICU, rapid progression to pneumonia (within a week of illness onset). Rapidly progressive pneumonitis, acute respiratory syndrome (ARDS), refractory hypoxia, respiratory failure, and extrapulmonary complications, including kidney injury, hypotension, hepatitis, and septic shock. Hospitalized patients, the median time from onset of symptoms to hospitalization is approximately 4 days. Critically ill patients, the median time from onset to ICU admission is approximately 5 days, and median time from onset to death is approximately 12 days. |

When to Suspect a Patient has MERS

MERS should be considered in anyone with fever and symptoms consistent with MERS (e.g. dyspnea, cough, shortness of breath), AND has recently traveled to countries in or near the Arabian Peninsula or history of being in a healthcare facility (patient, worker, or visitor) in a country or territory in or near the Arabian Peninsula in which recent health care associated cases of MERS have been identified, or close contact with a confirmed MERS case while the case was ill.

Key Steps for Frontline Clinical Staff

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| Identify | <ul style="list-style-type: none"> Assess the patient for signs and symptoms, travel history, and epidemiological criteria. For assistance, contact facility Infection Prevention and Control or on-call hospital epidemiologist. |
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- Isolate**
 - Provide a mask to the patient and initiate prompt isolation and triage. Follow infection control prevention guidance.
- Inform**
 - Notify dept/facility leadership, Infection Prevention & Control, on-call hospital epidemiologist.
 - Call NYC DOHMH Provider Access Line to report/ascertain risk (866-692-3641)
 - If determined by NYC DOHMH to be a “suspected or confirmed case of measles,” call Central Office Special Pathogens Program / Emergency Management. (646-864-5442).

Infection Prevention and Control

Hand Hygiene

- Perform hand hygiene before and after all patient contact, contact with potentially infectious material, and before putting on and upon removal of PPE, including gloves.
- Use soap and water for at least 20 seconds or use alcohol-based hand rubs. If hands are visibly soiled, use soap and water.

Patient Placement

- Place patient in a single-patient, **negative pressure airborne infection isolation room (AIIR)**.
- If an AIIR is not immediately available, isolate the patient in a private examination room. Keep the door closed, minimize entry and exit, avoid entry without appropriate PPE. Ensure the patient wears a mask at all times, provided there are no medical contraindications.
- Limit transport and movement of the patient outside of the room. When outside of the AIIR, patients should wear a well-fitting surgical mask to contain secretions.

Transmission-Based Precautions & Personal Protective Equipment

- Adhere to **Airborne + Contact** Precautions in addition to Standard Precautions.
 - Use gown, respirator, goggles or face shield, and gloves.
- Follow the [SP Level 1 PPE Donning and Doffing Checklist](#)

Environmental Infection Control

- To allow sufficient time for airborne contaminant removal:
 - If a negative pressure AIIR was NOT used, the room must remain vacant for at least 2 hours.
 - If a negative pressure room AIIR was used, the room should stay vacant for at least 35 minutes.
- Clean and disinfect the patient’s care area using an EPA registered disinfectant approved for MERS-CoV or human coronaviruses utilizing the appropriate contact times. Management of laundry, food service utensils, and medical waste should also be performed in accordance with routine procedures.

Diagnostic Testing

- **Consultation and approval from NYC DOHMH is required if specimen collection is warranted. Call NYC DOHMH Provider Access Line for further guidance (866-692-3641)**
- Collection of **lower respiratory, upper respiratory and serum specimens for testing is recommended.**
- Respiratory specimens should be collected as soon as possible after symptoms begin – ideally within 7 days.
- CDC laboratory specimen collection can be located [here](#)

Treatment and Immunization

- There is currently no specific treatment for MERS-CoV.
- Treatment includes supportive management of signs, symptoms, and complications.

References:

- CDC MERS Clinical Overview : [Clinical Overview of MERS | MERS | CDC](#)
- CDC MERS Infection Control: [Prevention and Control for Hospitalized MERS Patients | MERS | CDC](#)
- CDC Laboratory Testing: [Laboratory Testing for MERS | MERS | CDC](#)
- WHO MERS Fact Sheet: [Middle East respiratory syndrome coronavirus \(MERS-CoV\)](#)