

## Middle East Respiratory Syndrome Coronavirus (MERS-CoV)

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Important update for Clinicians, Laboratories and Public Health Personnel

Updated: 7 July 2013

### Changes from previous advice:

- Update to case numbers (80 cases, 44 deaths)
- Change to exposure period of interest (14 days prior to illness onset)
- Changes to sampling for MERS CoV testing
- WHO advice on clinical management

### Summary

As of 7 July 2013, a novel coronavirus, termed Middle East Respiratory Syndrome coronavirus (MERS-CoV) had been identified in 80 patients in or from Saudi Arabia, Jordan, Qatar, the United Arab Emirates (UAE), UK, France, Italy, Germany, Tunisia, Jordan. It has been associated in most cases with a severe acute pneumonia and 55% of cases have died. In patients with pneumonia or pneumonitis with a history of travel in the Arabian Peninsula in the 14 days before illness onset, or contact with known confirmed or probable cases in the 14 days before illness onset, the following is recommended:

1. The patient should be placed in a single room with negative pressure air-handling, and implement transmission-based precautions (contact and airborne), including the use of personal protective equipment (PPE).
2. Investigations and management should be performed as for community acquired pneumonia. Appropriate specimens should also be collected for MERS-CoV PCR testing.
3. The Public Health Unit in your Local Health District should be notified promptly of any suspected (and probable or confirmed) cases in order to discuss and co-ordinate testing and management of contacts  
**Call 1300 066 055.**

**Note:** *Transiting through an international airport (<24hours duration, remaining within the airport) on the Arabian Peninsula is **not** considered to be risk factor for infection.*

### What is the MERS-CoV?

Coronaviruses are a large and diverse family of viruses that include viruses that are known to cause illness in humans (including the common cold) and animals. MERS-CoV has never previously been detected in humans or animals but appears most closely related to coronaviruses previously found in bats. It is genetically distinct from the SARS CoV, and appears to behave differently.

### What is the current situation?

- See WHO website on the current situation: [http://www.who.int/csr/disease/coronavirus\\_infections/en/](http://www.who.int/csr/disease/coronavirus_infections/en/)

- The first 2 reported cases infected by the novel agent occurred in June and September 2012. As of 7 July 2013, a total of 80 cases had been confirmed by the WHO including 44 deaths.
- Most cases are known to have occurred in people with underlying conditions that may have predisposed them to respiratory infections, in many cases, multiple underlying conditions.
- Countries where cases acquired the infection in-country from an unknown source or through person to-person transmission have been Jordan, Kingdom of Saudi Arabia, Qatar, United Arab Emirates.
- Countries where cases were imported (a patient transferred for medical care), associated with travel or contact with a returned infected traveller have been Germany, France, Tunisia, Italy and the United Kingdom.

### Clusters

- Jordan April 2012– 2 confirmed and 9 probable cases in a healthcare setting in Zarqa.
- Saudi Arabia – October 2012, 3 confirmed cases and 1 probable case in a family in Riyadh.
- Saudi Arabia – February 2013, 3 cases in a family in Riyadh.
- United Kingdom – February 2013, 3 confirmed cases (one returned traveller from Pakistan and Saudi Arabia, and his two adult children).
- Saudi Arabia – April-May 2013, 23 confirmed and 11 probable cases, hospital associated, Al-Ahsa, Eastern Province.
- France – May 2013, 2 confirmed cases (a returned traveller from Dubai, Arab Emirates and his hospital contact in Lille France).
- Tunisia – May 2013, 1 probable case in a traveller returning from Saudi Arabia, 2 confirmed cases in family members.
- Italy – May 2013, 1 confirmed case in a traveller returning from Jordan and 2 confirmed cases in contacts (niece and co-worker).

### What are the symptoms?

Almost all confirmed cases have presented with, or later developed, acute, serious respiratory illness. Typical symptoms have included fever, cough, shortness of breath, and breathing difficulties. Some cases have had diarrhoea and/or vomiting. A small number of cases have presented with mild influenza-like symptoms or have been asymptomatic. An immunocompromised patient with pneumonitis presented with atypical non-respiratory symptoms (including fever and diarrhoea).

### Are health workers at risk from the MERS-CoV?

Nearly half of all confirmed cases have occurred in healthcare-associated clusters, and there have been a small number of cases in healthcare workers.

The particular conditions or procedures that lead to transmission in hospital settings have not yet been determined. Infection control recommendations in this document for probable and confirmed cases aim to provide the highest level of protection for health care workers, given the current state of knowledge. Health care workers should follow the NHMRC's *Australian Guidelines for the Prevention and Control of Infection in Healthcare (2010)*, particularly section B2.4, which can be found [here](#).

### **Has the WHO recommended any travel restrictions related to this new virus?**

The WHO does not recommend that any travel restrictions are applied with respect to this event. The WHO will continue to provide updated information as it receives it.

### **Who do I test for MERS-CoV?**

Testing should be considered for:

1. Individuals with pneumonia or pneumonitis and history of travel to, or residence in, the Arabian Peninsula, in the 14 days before illness onset.
  - Transiting through an international airport (<24 hours stay, remaining within the airport) on the Arabian Peninsula is not considered to be risk factor for infection.
  - Countries in the Arabian Peninsula and immediate surrounding areas may be defined as Bahrain, Iraq, Iran, Israel, Jordan, Kuwait, Lebanon, Oman, Palestinian territories, Qatar, Saudi Arabia, Syria, the United Arab Emirates (UAE), and Yemen.
2. Individuals with pneumonia or pneumonitis and history of contact with those in point 1 above in the 14 days before illness onset.
3. Health care workers with pneumonia, who have been caring for patients with severe acute respiratory infections, particularly patients requiring intensive care, without regard to place of residence or history of travel, where another cause has not been confirmed.

Clinicians should be aware of atypical non-respiratory presentations in immunocompromised patients but testing for MERS-CoV should be performed in patients with radiological evidence of pneumonitis with the appropriate travel/contact history.

### **How do I test for MERS-CoV?**

- Routine tests for acute pneumonia should be performed where indicated, including bacterial culture, serology, urinary antigen testing and tests for respiratory viruses.
- Respiratory samples including upper respiratory tract viral swabs, nasopharyngeal aspirates, sputum, bronchoalveolar lavage fluid, lung biopsies and post-mortem tissues are suitable for testing for MERS-CoV. Lower respiratory tract specimens should be collected where possible.
- The WHO emphasises repeat testing (especially of lower respiratory tract specimens) in compatible cases as initial results may be negative.
- Transmission-based contact and airborne precautions must be used when taking respiratory specimens. These are described in *NHMRC: Australian Guidelines for the Prevention and Control of Infection in Healthcare – 2010* (particularly section B2.4), and include the requirement for negative pressure air-handling and PPE including the use of gloves, gowns, P2 (N95) respirators, eye protection and hand hygiene.
- Laboratory staff should handle specimens under PC2 conditions in accordance with AS/NZS 2243.3:2010 Safety in Laboratories Part 3: Microbiological Safety and Containment.
- Please contact the Public Health in your Local Health District to notify any suspect cases. If authorised by the local Public Health Unit, suitable samples from suspect cases should be referred to ICPMR, Westmead Hospital.

- Call the Clinical Microbiologist on call on (02 9845 6255 during business hours, or after-hours through the Westmead Hospital switch 02 9845 5555) about the referral, and mark the specimens URGENT.
- Samples should be transported in accordance with current regulatory requirements.

### What are the recommended isolation and PPE recommendations for patients in hospital?

These recommendations on isolation and PPE for probable and confirmed cases take a deliberately cautious approach by recommending measures that aim to control the transmission of pathogens that can be spread by the airborne route. These measures are detailed in *NHMRC: Australian Guidelines for the Prevention and Control of Infection in Healthcare – 2010* (particularly section B2.4), available [here](#). In summary, transmission-based precautions for probable and confirmed cases should include:

- Placement of confirmed and probable cases in a negative pressure room if available, or in a single room from which the air does not circulate to other areas
- Airborne transmission precautions, including routine use of a P2 respirator, disposable gown, gloves, and eye protection when entering a patient care area
- Contact precautions, including close attention to hand hygiene
- If transfer of the confirmed or probable case outside the negative pressure room is necessary, asking the patient to wear a “surgical” face mask while they are being transferred and to follow respiratory hygiene and cough etiquette.

### Further advice from the WHO on clinical management

[http://www.who.int/csr/disease/coronavirus\\_infections/InterimGuidance\\_ClinicalManagement\\_NovelCoronavirus\\_11Feb13u.pdf](http://www.who.int/csr/disease/coronavirus_infections/InterimGuidance_ClinicalManagement_NovelCoronavirus_11Feb13u.pdf)

### Case Definitions

#### 1. Confirmed Case

A person with laboratory confirmation of infection with the MERS-CoV.

#### 2. Probable Case

- A person with an acute respiratory infection with clinical, radiological, or histopathological evidence of pulmonary parenchymal disease (e.g. pneumonia or Acute Respiratory Distress Syndrome, (ARDS)); **AND**
- No possibility of laboratory confirmation for MERS-CoV either because the patient or samples are not available for testing; **AND**
- Close contact\* with a laboratory-confirmed case.

#### \* Close contact includes:

- anyone who provided care for the patient or who had other similarly close physical contact; this includes health care workers or family members.
- anyone who stayed at the same place as a probable or confirmed case while the case was symptomatic, including hospital room contacts.

**Reporting**

WHO requests that confirmed and probable cases be reported within 24 hours of being classified as such, through the regional Contact Point for International Health Regulations at the appropriate WHO Regional Office.

**Advice for contacts of cases**

Contacts of cases should be directed to the number below for advice.

**Who do I contact if I have a suspected case?**

The Public Health Unit in your Local Health District should be notified promptly of any suspected (and probable or confirmed) cases in order to discuss and co-ordinate testing and management of contacts.

**Call 1300 066 055** (a state-wide number – diverts to your local Public Health Unit)