

## **Novel Coronavirus: Important information for Clinicians and Laboratories**

**Summary:** As of 6 December 2012, a novel coronavirus (HCoV-EMC) has been identified in 9 patients from Saudi Arabia, Qatar and Jordan associated with a severe acute pneumonia.

**In patients with severe acute pneumonia or pneumonitis with a history of travel in countries of the Arabian Peninsula within 10 days of illness onset, or contact with known confirmed or probable cases, the following is recommended:**

- 1. Place the patient in a single room with negative pressure air-handling, and implement standard and transmission-based precautions (contact and airborne), including the use of personal protective equipment (PPE).**
- 2. Investigate and manage the patient as for community acquired pneumonia. Appropriate specimens should also be collected for HCoV-EMC PCR testing.**
- 3. Contact your local Public Health Unit promptly of any suspected cases on 1300 066 055 for a joint risk assessment and to arrange urgent testing where indicated.**

### **What is the novel coronavirus?**

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

### **What is the current situation?**

- See the World Health Organization (WHO) website on the current situation at [http://www.who.int/csr/disease/coronavirus\\_infections/en/index.html](http://www.who.int/csr/disease/coronavirus_infections/en/index.html)
- 9 cases of illness with the novel coronavirus have been confirmed and reported to WHO over recent months. Five cases have occurred in citizens of the Kingdom of Saudi Arabia and 2 have occurred in citizens of Qatar. Two cases from an earlier cluster of undiagnosed respiratory illness in Jordan have now been tested for and confirmed with the novel strain. Several of the patients also developed acute renal failure.
- Of the 9 cases, 5 had fatal outcomes.
- Three of the confirmed cases from Saudi Arabia were epidemiologically linked and occurred in one family living in the same household; two of these have died. One additional family member in this household also became ill with similar symptoms. This patient has recovered and has tested negative for HCoV-EMC.
- WHO does not recommend that any travel restrictions are applied with respect to this event. WHO will continue to provide updated information as it receives it.

## Summary table of cases to date

CASES	COUNTRY	LAB STATUS	Contact	OUTCOME
Case 1	Jordan	Confirmed		Died
Case 2	Jordan	Confirmed		Died
Case 3	Saudi Arabia	Confirmed		Died in June. Reported 15 Sep
Case 4	Qatar (travel to Saudi Arabia)	Confirmed		Recovered. Reported 23 Sep
Case 5	Saudi Arabia	Confirmed		Recovered. Reported 4 Nov
Case 6	Saudi Arabia	Confirmed	Contact of case	Recovered. Reported 19 Nov
Case 7	Saudi Arabia	Confirmed	Contact of case	Died. Reported 23 Nov.
Case 8	Qatar	Confirmed		Recovered. Reported 23 Nov
Case 9	Saudi Arabia	Confirmed	Contact of case	Died
Probable	Saudi Arabia	Negative	Contact of case	Recovered

### What are the symptoms?

Confirmed cases have presented with acute, serious respiratory illness. Typical symptoms have included fever, cough, shortness of breath, and breathing difficulties.

### Are health workers at risk from the novel coronavirus?

So far there is no definitive evidence of the virus being passed from person to person including to health care workers. However, infection control recommendations in this document 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.

### Who do I test for HCoV-EMC?

Testing should be considered for:

1. Individuals with pneumonia or pneumonitis and history of travel to, or residence in, countries of the Arabian Peninsula within 10 days of illness onset.
2. Individuals with pneumonia or pneumonitis and history of close contact<sup>1</sup> with a confirmed or probable case of HCoV-EMC within 10 days of illness onset.
3. Health care workers with pneumonia not already explained by any other infection or aetiology, including all clinically indicated tests for community-acquired pneumonia, who have been caring for patients with

---

<sup>1</sup> A close contact is defined by WHO as:

- Anyone who provided care for the patient, including a health care worker or family member, or who had other similarly close physical contact OR
- Anyone who stayed at the same place (e.g. lived with, visited) as a probable or confirmed case while the case was ill

[http://www.who.int/csr/disease/coronavirus\\_infections/InterimRevisedSurveillanceRecommendations\\_nCoV\\_infection\\_03Dec12.pdf](http://www.who.int/csr/disease/coronavirus_infections/InterimRevisedSurveillanceRecommendations_nCoV_infection_03Dec12.pdf) Accessed 10 Dec. 12

severe acute respiratory infections (SARI), particularly patients requiring intensive care, without regard to place of residence or history of travel.<sup>2</sup>

### How do I test for HCoV-EMC?

- Routine tests for acute pneumonia should be performed where indicated, including bacterial culture, serology, urinary antigen testing and tests for influenza 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 HCoV-EMC.
- Both standard infection control precautions and 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) masks, 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?

Until further information about the mode of transmission of HCoV-EMC is known, these recommendations on isolation and PPE 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). In summary, transmission-based precautions should include:

- Placement of the patient 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 (N95) mask, disposable gown, gloves, and eye protection when entering a patient care area
- Standard and contact precautions, including close attention to hand hygiene
- If transfer of the patient outside the negative pressure room is necessary, the patient must wear a correctly fitted submicron face mask (surgical mask) while they are being transferred and to follow respiratory hygiene and cough etiquette.

---

<sup>2</sup> The lower threshold for investigation of HCWs with SARI without the requirement of a travel history is based on the experience with SARS where HCWs were disproportionately affected. Although HCoV-EMC is distantly related to the SARS CoV, they are different. Based on current information, HCoV-EMC does not appear to transmit easily between people, unlike SARS CoV. Investigation of HCW will also help determine whether the virus is distributed more widely in the human population beyond the three countries that have identified cases so far. Refer to [http://www.who.int/csr/disease/coronavirus\\_infections/update\\_20121130/en/index.html](http://www.who.int/csr/disease/coronavirus_infections/update_20121130/en/index.html) Accessed 10 Dec. 12

## Case Definitions

### 1. Suspect Case (under investigation)

- A person with an acute respiratory infection, which may include history of fever or measured fever ( $\geq 38^{\circ}\text{C}$ ) and cough, AND
- Suspicion of pulmonary parenchymal disease (e.g. pneumonia or Acute Respiratory Distress Syndrome (ARDS)), based on clinical or radiological evidence of consolidation, AND
- Residence in or history of travel to the Arabian Peninsula<sup>§</sup> or neighbouring countries within 10 days before onset of illness, OR
- Close contact with a PROBABLE or CONFIRMED case within 10 days before onset of illness, AND
- Not already explained by any other infection or aetiology, including all clinically indicated tests for community-acquired pneumonia according to local management guidelines. It is not necessary to wait for all test results for other pathogens before testing for HCoV-EMC.

### 2. Probable Case

- A person fitting the definition above of a “Suspect Case Under Investigation” with clinical, radiological, or histopathological evidence of pulmonary parenchyma disease (e.g. pneumonia or ARDS) but no possibility of laboratory confirmation either because the patient or samples are not available or there is no testing available for other respiratory infections, AND
- Close contact with a laboratory confirmed case, AND
- Not already explained by any other infection or aetiology, including all clinically indicated tests for community-acquired pneumonia according to local management guidelines.

### 3. Confirmed Case

- A person with laboratory confirmation of infection with the HCoV-EMC.

§ Countries of the Arabian Peninsula should be considered as: Jordan, Kuwait, Bahrain, Qatar, the United Arab Emirates (UAE), Oman, Yemen and Saudi Arabia.

## Advice for contacts of cases

Contacts of cases should be directed to their local Public Health Unit for advice on 1300 066 055.

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

In NSW, suspected cases should be reported to the local Public Health Unit on 1300 066 055.

## Useful links

For regular updates and technical information on HCoV-EMC, see the World Health Organization Coronavirus Infections website [http://www.who.int/csr/disease/coronavirus\\_infections/en/index.html](http://www.who.int/csr/disease/coronavirus_infections/en/index.html)