

Chief Health Officer Alert

16 October 2013

Status: Active

Update: Middle East Respiratory Syndrome Coronavirus (MERS-CoV)

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Date issued: 16 October 2013 - Update to Alert issued 15 July 2013

Issued by: Dr Rosemary Lester, Chief Health Officer, Victoria

Issued to: Clinicians, laboratories and Public Health personnel.

Key messages

- This CHO Alert is an update to the CHO Alert dated 15 July, 2013 for Middle East Respiratory Syndrome Coronavirus (MERS-CoV).
- Case numbers have been updated. As of 4 October 2013, (MERS-CoV) has been identified in 136 patients in or from Saudi Arabia, Qatar, UK, France, Italy, Germany, Tunisia, Jordan and the United Arab Emirates (UAE) associated in most cases with a severe acute pneumonia. 42% of cases have died.
- Patients with pneumonia or pneumonitis with a history of travel to, or residence 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 should be isolated.
- Many Muslims from Australia will travel to Saudi Arabia in October to undertake the Hajj between 13 and 18 October, and may travel at other times to undertake the Umrah. Health professionals should be aware of the possibility of cases in travellers returning from the Hajj which ends on 18 October 2013.
- The virus is thought to be of animal origin, but the source of infections remains unknown, although limited person-to-person transmission has occurred, especially in healthcare settings.

What is the issue?

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.

Case Definitions

1. Confirmed case - a person with laboratory confirmed infection with MERS-CoV.
2. Probable case –
 - A person with an acute respiratory infection with clinical, radiological or histopathological evidence of pulmonary parenchymal disease eg 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.

What is the current situation?

- See [World Health Organisation \(WHO\) website](http://www.who.int/csr/disease/coronavirus_infections/en/) on the current situation (http://www.who.int/csr/disease/coronavirus_infections/en/).
- The first known cases of MERS-CoV occurred in March 2012, and were identified retrospectively. As of 4 October 2013, a total of 136 cases were confirmed by WHO, with 58 deaths.
- Most confirmed cases have presented with, or later developed, acute, serious lower respiratory tract disease. A small number of asymptomatic cases and cases with mild symptoms have been identified through contact tracing.
- Most cases are known to have occurred in people with underlying conditions (in many cases, multiple underlying conditions) that may have predisposed them to respiratory infections.
- Countries where cases acquired the infection in-country from an unknown source or through person to-person transmission are Jordan, Kingdom of Saudi Arabia, Qatar, and 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.
- Infections have occurred sporadically, as well as in a number of clusters, including a hospital-associated cluster of 23 cases in Saudi Arabia.

Who is at risk?

Individuals with a history of travel to, or residence in the Arabian Peninsula in the 14 days before illness onset, and individuals with pneumonia or pneumonitis and history of contact with them in the 14 days before illness onset.

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

Pilgrims undertaking the Hajj and Umrah

Clinicians, laboratories and public health practitioners should be aware that many Muslims from Australia will travel to Saudi Arabia in October to undertake the Hajj between 13 and 18 October, and may travel at other times to undertake the Umrah. Health professionals should be aware of the possibility of cases in travellers returning from the Hajj which ends on 18 October 2013.

The Saudi Ministry of Health recommends that elderly people and those with chronic diseases such as heart disease, kidney disease, respiratory disease and diabetes, as well as patients with congenital and acquired immune deficiency diseases, cancer patients, pregnant women and children, defer travel to Saudi Arabia for the Umrah and Hajj this year.

WHO advises that pre-existing major medical conditions (e.g. chronic diseases such as diabetes or chronic bronchitis, immunodeficiency) can increase the likelihood of medical problems, including MERS-CoV infection, during travel; thus, pilgrims should consult their doctor before travelling to review the risk and assess whether making the pilgrimage is medically advisable.

Travellers should be aware of relevant immunisation requirements and the importance of personal hygiene, including frequent hand washing and avoiding close contact with animals and people who are suffering from acute respiratory infection. Travellers should be advised to seek medical attention as soon as possible if they feel unwell.

For further information, refer to [WHO interim travel advice related to MERS-CoV for pilgrimages to the Kingdom of Saudi Arabia](http://www.who.int/ith/updates/20130725/en/index.html) (<http://www.who.int/ith/updates/20130725/en/index.html>), DFAT's Smartraveller website for [information for travellers](http://www.smartraveller.gov.au/) (<http://www.smartraveller.gov.au/>) and the Saudi Ministry of Health webpage for [health regulations for the Hajj and Umrah](http://www.moh.gov.sa/en/Hajj/Pages/HealthRegulations.aspx) (<http://www.moh.gov.sa/en/Hajj/Pages/HealthRegulations.aspx>).

Symptoms and transmission

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. A small number of cases have presented with mild influenza-like symptoms or been asymptomatic. An immunocompromised patient with pneumonitis presented with atypical non-respiratory symptoms (including fever and diarrhoea).

The particular conditions or procedures that lead to transmission in hospital settings have not yet been determined. Infection control recommendations 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 \(2010\)](http://www.nhmrc.gov.au/guidelines/publications/cd33), particularly section B2.4. (<http://www.nhmrc.gov.au/guidelines/publications/cd33>).

Testing

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 a 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 to test for MERS-CoV:

- Testing should only be carried out after discussion with the Communicable Disease Prevention and Control Section at the Department of Health and only where MERS-CoV is strongly suspected on clinical and epidemiological grounds.
- 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.
- The Communicable Disease Prevention and Control Section will authorise testing and advise VIDRL to expect the samples, which should be transported in accordance with current regulatory requirements.

Prevention/treatment

In patients with pneumonia or pneumonitis with a travel history from the Arabian Peninsula or contact with known confirmed or probable cases within two weeks of illness onset, the following is recommended:

1. Place the patient 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. Notify the Department of Health of any suspected (and probable or confirmed) cases in order to discuss and co-ordinate testing and management of contacts.

Recommended isolation and PPE recommendations for patients in hospital

These NHMRC [recommendations](http://www.nhmrc.gov.au/guidelines/publications/cd33) (<http://www.nhmrc.gov.au/guidelines/publications/cd33>) take a deliberately cautious approach that aim to control the transmission of pathogens that can be spread by the airborne route. In summary:

- Place the 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;
- Use 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, ask the patient to wear a surgical face mask while they are being transferred and to follow respiratory hygiene and cough etiquette.

More information

Updates on the current situation: http://www.who.int/csr/disease/coronavirus_infections/en/

Clinical management:

http://www.who.int/csr/disease/coronavirus_infections/InterimGuidance_ClinicalManagement_NovelCoronavirus_11Feb13u.pdf

Infection Control Guidelines: NHMRC's Australian Guidelines for the Prevention and Control of

Infection in Healthcare (2010) <http://www.nhmrc.gov.au/guidelines/publications/cd33>

Contacts

Advice and disease notifications - Communicable Disease Prevention and Control Section on 1300 651 160.

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.

Yours sincerely



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Authorised by the Victorian Government, Melbourne.