Middle East respiratory syndrome coronavirus (MERS-CoV)

Situation update for 7 May 2015

Available from the Department’s website (www.health.gov.au/mers-coronavirus)

Key points

• As of 1 May 2015, the World Health Organization (WHO) global case count was 1,111 laboratory-confirmed cases of MERS-CoV, including at least 422 deaths (case fatality rate 38%) since the first cases were reported in September 2012.1

• The surge of cases in February 2015 (81 cases) that was attributable to a rise in transmission in healthcare settings in Saudi Arabia appears to be subsiding, with 40 cases reported having onset dates in March 2015, and only 6 so far for April.

• All cases have had a history of residence in or travel to the Middle East (>90% Saudi Arabia), or contact with travellers returning from these areas. There have been no cases in Australia.

• The WHO emphasises the need for universal application of standard infection control precautions, and transmission-based precautions when in contact with suspected or confirmed cases, and that it is not possible to distinguish MERS-CoV from other respiratory infections.1,2

• MERS-CoV can cause severe acute respiratory disease, particularly in people with underlying conditions. People with diabetes, renal failure, chronic lung disease and immunocompromised persons are at higher risk of severe disease.1

• Camels are suspected to be the primary source of infection for humans, but the exact routes of direct or indirect exposure are not fully understood, and further studies (particularly case control studies) are needed. The WHO advises that people should avoid drinking raw camel milk or camel urine, or eating meat that has not been properly cooked.

• There is no evidence of ongoing community transmission and only occasional instances of household transmission. Limited transmission in healthcare settings has been a feature of the outbreak.

Figure: Epidemic curve of 979 confirmed and 18 probable MERS-CoV cases by confirmation status; as of 1 April 2015.1
An additional 132 confirmed cases (84+48) are not included in the epicurve because individual onset dates are not available.
**Actions taken to date and next steps**

- The IHR Emergency Committee on MERS-CoV convened by the WHO Director General is chaired by Australia’s Chief Medical Officer. The committee has met seven times, most recently by teleconference on 4 February 2015. The outcomes are available from the [WHO website](http://www.who.int/mediacentre/news/statements/2015/8th-mers-emergency-committee/en/)  
- Information on MERS-CoV for consumers, for clinicians, labs and public health personnel and for GPs can be accessed from the [the Department’s website](http://www.health.gov.au/MERS-coronavirus).  
- A national guideline on the public health management of MERS-CoV, in the event of a case in Australia has been developed by the Communicable Diseases Network Australia and endorsed by the Australian Health Protection Principal Committee (AHPPC) and made available on the Department’s website.  
- The Chief Medical Officer held teleconferences with relevant medical Colleges and peak medical bodies to raise awareness on 4 June 2013 and 5 June 2014.  
- The Department is working with states and territories through AHPPC and its standing committees.  
- The Public Health Laboratory Network has provided advice on the availability of testing for MERS-CoV in Australia. Suitable PCR-based tests are available to diagnose the infection if required. Serological tests for MERS-CoV are not currently available in Australia for humans.  
- The Department of Foreign Affairs and Trade (DFAT) has issued a Smartraveller bulletin on MERS-CoV and country-specific advice for affected areas of the Middle East link to the MERS-CoV bulletin. The advice is available from [DFAT’s website](www.smartraveller.gov.au/)  

**Next steps**

- Continue monitoring, and respond as required.  

**Advice to travellers**

- Australians travelling to the Middle East and who are at increased risk of severe disease should avoid contact with camels and their secretions, and avoid drinking raw camel milk. All travellers should practise good hand and food hygiene, particularly where camels are present.  
- The WHO advises that if travellers develop an acute respiratory illness severe enough to interfere with usual daily activities while travelling or during the two weeks after their return, they should:  
  - seek medical attention, informing the health professional of their recent travel,  
  - wash their hands regularly and practice respiratory hygiene (cough etiquette etc),  
  - and, minimise their contact with others to keep from infecting them.  
- Australians travelling to the Middle East to work in healthcare settings should note the advice to healthcare workers on infection control available from the WHO, the CDC and the destination country.  

**Epidemiological update**

As of 1 May 2015, the World Health Organization (WHO) global case count was 1,111 laboratory-confirmed cases of MERS-CoV, including at least 422 deaths (case fatality rate 38%) since the first cases were reported in September 2012.¹

There were 40 cases with onset dates in March 2015 and 6 so far in April, compared with 81 cases with onset dates in February 2015, a marked increase compared with the 30 cases in January 2015. The increase was attributable to a rise in transmission in health care settings in Saudi Arabia. During February and March 2015, there were at least 14 identified clusters in Saudi Arabia involving at least 46 cases, most with transmission in healthcare settings but also some household transmission.

More than 90% of all cases since the beginning of the outbreak have been reported from, or are related to exposures in Saudi Arabia. All of the 194 cases since 1 November 2014 have related to exposures in Saudi
Arabia, except for three cases in Oman (in a household cluster where the index case had contact with camels), two cases in or related to the United Arab Emirates (one of them Germany ex-UAE) and two cases in Qatar.

Sporadic cases have more frequently had severe symptoms, and have been older, male and with underlying conditions. Mild and asymptomatic cases have tended to be of a range of ages, including children, and without underlying conditions. MERS-CoV continues to cause symptomatic disease primarily in older males with a range of underlying conditions. Of the 194 cases with onsets since 1 November 2014, 75% were male and the median age is 56 years. Most of these recent cases have had underlying conditions (73%, 141/194), particularly diabetes mellitus (Table).

Table: Reported co-morbidities for the 194 cases of MERS-CoV with onset or specimen dates between 1 November 2014 and 1 May 2015.

<table>
<thead>
<tr>
<th>Co-morbidity</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any underlying condition</td>
<td>141</td>
<td>73%</td>
</tr>
<tr>
<td>Diabetes</td>
<td>96</td>
<td>49%</td>
</tr>
<tr>
<td>Heart disease</td>
<td>33</td>
<td>17%</td>
</tr>
<tr>
<td>Hypertension</td>
<td>82</td>
<td>42%</td>
</tr>
<tr>
<td>No underlying conditions</td>
<td>49</td>
<td>25%</td>
</tr>
<tr>
<td>Not stated/unknown</td>
<td>4</td>
<td>2%</td>
</tr>
</tbody>
</table>

In mid-2014, the Saudi Ministry of Health implemented a package of control measures, which included an intensive roll-out of training for healthcare workers in infection control and new standards for the surveillance and reporting of MERS-CoV. These additional measures were acknowledged by the WHO IHR. The Saudi Ministry of Health has conducted several reviews of surveillance, resulting in the updating of case numbers from earlier time periods and increases in case numbers. The recent spike in transmission in healthcare settings reinforces the need for further strengthening of these measures.

Transmission to household contacts occurs at low levels, estimated at 5% of household contacts, and low levels of viral RNA may be carried without obvious symptoms, particularly in younger people. A case report has found that viral RNA was detectable for over a month after exposure in an asymptomatic health care worker in Jeddah, Saudi Arabia. While this does not show that the health care worker was capable of infecting others, and no detail is given about whether this is suspected, prolonged shedders might explain the large outbreaks seen in healthcare settings.

Between November 2014 and 1 May 2015, 56 of the 194 cases (29%) had direct contact with camels and/or drank raw camel milk. Dromedary camels are the suspected source of infection, but the exact routes of direct or indirect exposure are not fully understood. Evidence of past (over two decades) and current carriage and/or infection has been found in a large number of camels from various regions of the Middle East and elsewhere, in some cases with epidemiological links to human cases, and some with matching sequences to human cases from the same areas. The area of risk for MERS-CoV may extend into regions beyond the Middle East. In camels, acute infection is more likely to affect young animals, while older animal are more likely to have evidence of past infection. A large serosurvey in Saudi Arabia found evidence of past MERS-CoV infection in 2.3% (2/87) of people who work as camel shepherds and 3.6% (5/140) of slaughterhouse workers, and 0.2% (15/10,009) of healthy people in the general population. These results suggest that individuals with subclinical infection could be the source of infection for cases of MERS-CoV who have no contact with camels and no contact with a confirmed case.
The WHO recommends people at high risk of severe disease due to MERS-CoV, including those with diabetes, chronic lung disease, pre-existing renal failure, or those who are immuno-compromised, take appropriate precautions when visiting farms, barn areas or market environments where camels are present. These measures might include avoiding contact with camels, good hand hygiene, and avoiding drinking raw milk or eating food that may be contaminated with animal secretions or products unless they are properly washed, peeled, or cooked. For the general public, when visiting a farm or a barn, general hygiene measures, such as regular hand washing before and after touching animals, avoiding contact with sick animals, and following food hygiene practices, should be adhered to.²

Further information

The latest case counts and documents, including recommendations for laboratory testing and advice to travellers are available from the WHO:

- Coronavirus infections – (www.who.int/csr/disease/coronavirus_infections/en/)

CDNA advice to clinicians, laboratories and public health personnel and to GPs, as well as a fact sheet for consumers/patients and an epidemiological summary are available from:


References


