



## Australian Government

### Department of Health

# Middle East respiratory syndrome coronavirus (MERS-CoV)

Situation update 3 July 2014

Available from [the Department's website](http://www.health.gov.au/mers-coronavirus) ([www.health.gov.au/mers-coronavirus](http://www.health.gov.au/mers-coronavirus))

### Key points

- As of 11 June 2014, the WHO global case count was 826 laboratory-confirmed cases of MERS-CoV, including 287 deaths, and now includes the revised case numbers in Saudi Arabia.<sup>1</sup>
- While the WHO case count has increased dramatically in the past fortnight, much of the increase relates to cases with onset prior to 6 May 2014. The number of new cases is decreasing compared with April and May 2014.
- Most cases (>85%) have been reported from, or related to exposures in Saudi Arabia, and all cases have had a history of residence in or travel to the Middle East, or contact with travellers returning from these areas. There have been no cases in Australia.
- Up to 75% of recent cases are considered to be secondary cases. The majority are healthcare workers who have been infected in healthcare settings, and 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.<sup>2</sup>
- Camels are suspected to be the primary source of infection for humans, but the exact routes of direct or indirect exposure remain unknown.<sup>2</sup>
- MERS-CoV can cause severe acute respiratory disease, particularly in people with underlying conditions, and mild flu-like illnesses and asymptomatic cases are common in secondary cases.
- While there is no evidence indicating transmission of MERS-CoV from asymptomatic infected individuals and no evidence of ongoing community transmission.

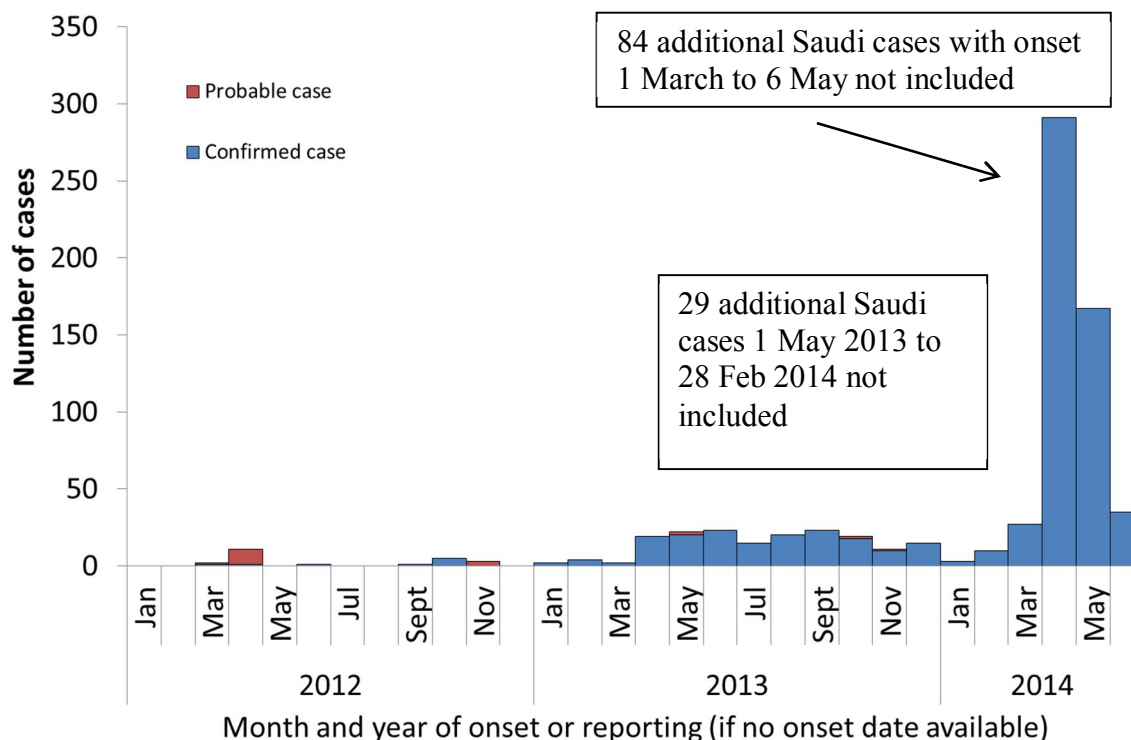


Figure: Epidemic Curve of 713 laboratory-confirmed MERS-CoV patients by confirmation status; as of 2 July 2014.<sup>1</sup> 113 cases from Saudi Arabia with no onset or reporting date are excluded.

## ***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 six times, most recently on 16 June 2014, and has determined that as of that date, the conditions were not met for the outbreak of MERS-CoV to be declared a PHEIC. Based on current information, the Committee indicated that the situation remains serious in terms of public health impact, but the upsurge in cases that began in April has now decreased and there is no evidence of sustained human-to-human transmission in communities.<sup>3</sup>
- 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) - (www.health.gov.au/MERS-coronavirus).
- A working group of the Communicable Diseases Network Australia is developing advice on the management of contacts and other public health responses, in the event of a case in Australia.
- 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 the Australia Health Protection Principal Committee (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 the country-specific advice for Saudi Arabia, Qatar, the United Arab Emirates, Jordan, Oman, Lebanon and Yemen link to this bulletin. The advice is available from [DFAT's website](http://www.smartraveller.gov.au/): (www.smartraveller.gov.au/)
- Materials to raise awareness amongst travellers at airports and through travel agents are being revised and will be re-issued in the coming weeks.

## **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:
  - o seek medical attention, informing the health professional of their recent travel,
  - o wash their hands regularly and practice respiratory hygiene (cough etiquette etc),
  - o 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 2 July 2014, 826 laboratory-confirmed cases had been reported by the WHO world-wide since the first cases were reported in September 2012.<sup>1</sup> Two hundred and eighty-seven are known to have died, and the case fatality rate is 35% .<sup>1</sup> The first cases had onsets in March and April 2012. The recent large increase in case numbers reflects infection acquired through transmission in health care settings.<sup>4</sup> On 3 June 2014, the Saudi Ministry of Health announced that following a review of surveillance data, case numbers for the country were to increase by 20% and the number of deaths by 48%.<sup>5</sup> The majority of the newly reported cases had onset dates in April and May 2014, but some were from earlier time periods.

All cases have a history of residence in or travel to the Middle East, or contact with travelers returning from these areas. More than 85% of cases acquired the infection in Saudi Arabia, or are related to contact with travellers returning from these areas. The infection has occurred in the community (sporadic cases with unknown exposure), in families (contact with infected family members) and in health care facilities (patients and healthcare workers) from whence the majority of cases have been reported.

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.<sup>1,6</sup> Imported cases were recently reported in Algeria, the United States, Iran, the Netherlands, Greece, Turkey, Malaysia, Egypt, the Philippines and cases acquired from an unknown source in Lebanon, Oman and Yemen for the first time. All imported cases have been related to exposures in the Middle East.

A probable case of MERS-CoV infection in Jordan in 2012 miscarried at 5 months gestation on the seventh day of her acute respiratory illness.<sup>7</sup> The woman was had serological evidence of MERS-CoV infection, but did not meet the WHO confirmed case definition. The woman had exposure to two family members who were symptomatic (one confirmed and one probable MERS-CoV case).<sup>7</sup>

Dromedary camels are the suspected source of infection, but the exact routes of direct or indirect exposure remain unknown,<sup>2</sup> however, camel to human transmission has been shown to be the most likely transmission mode for at least one case on which two studies have been published.<sup>8,9</sup> This case in Saudi Arabia in November 2013 had close daily contact with his nine camels, and several camels showed signs of a respiratory illness with nasal discharge in the weeks prior to onset of his illness.<sup>8,9</sup> The authors of one of the studies concluded that viral sequences from the case and one of the camels were identical, that camel to human transmission had occurred via nasal secretions and that serological evidence was also consistent with camel to human transmission.<sup>9</sup> However, a previous paper published on the same case found subtle differences between camel and human sequences, and the case was also reported to have consumed unpasteurised milk from the herd daily.<sup>8</sup>

Saudi camel isolates have been shown to have greater genetic variation than human isolates, indicating that only a small number of genotypes might be capable of infecting humans.<sup>10</sup> Antibodies indicating past infection have been found in a large number of camels unrelated to any human cases, including in samples taken in 2003.<sup>11</sup> In Qatar in 2013, 3 out of 14 camels tested positive by PCR in a herd with which two cases had contact.<sup>12</sup> Recent studies have shown serological evidence of widespread past infection in dromedary camels over two decades in Saudi Arabia<sup>13</sup> and one decade in the United Arab Emirates.<sup>14</sup> Viral sequences in camels Saudi Arabia match those in human cases from the same areas.<sup>13</sup> Dromedary camels in Egyptian abattoirs (imported from Sudan or Ethiopia)

were PCR positive for MERS-CoV or had serological evidence of past infection, suggesting that the area of risk for MERS-CoV may extend into regions beyond the Middle East.<sup>15</sup> An absence of serological evidence of past infection in the abattoir workers shows that instances of animal to human transmission may be uncommon.<sup>15</sup>

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.<sup>2</sup> The WHO has also re-issued travel advice on MERS-CoV for pilgrimages

### ***Further information***

The latest case counts and documents related to MERS-CoV are available from the WHO:

- [Coronavirus infections](http://www.who.int/csr/disease/coronavirus_infections/en/) – (www.who.int/csr/disease/coronavirus\_infections/en/)

The WHO has issued recommendations for laboratory testing:

- [Laboratory Testing for Middle East Respiratory Syndrome Coronavirus](http://www.who.int/csr/disease/coronavirus_infections/en/) – (www.who.int/csr/disease/coronavirus\_infections/en/)

The WHO has issued advice to travellers on MERS-CoV:

- [Middle East respiratory syndrome - coronavirus \(MERS-CoV\) – Update](http://www.who.int/ith/updates/20130605/en/index.html) – (www.who.int/ith/updates/20130605/en/index.html)

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:

- [the Department's website](http://www.health.gov.au/mers-coronavirus) – (www.health.gov.au/mers-coronavirus)

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