



Risk assessment of Middle East Respiratory Syndrome Coronavirus (MERS-CoV)

Updated: September 2015

Epidemiological update

As of 9 September 2015, 1542 cases of MERS-CoV have been reported to WHO with at least 544 related deaths. Most cases have been reported from the Arabian Peninsula particularly the Kingdom of Saudi Arabia (KSA). Excluding the South Korean outbreak, 89% of all reported cases of MERS-CoV have been from KSA. Dromedary camels are an identified host, and the likely source of primary infection in some cases, however most cases are now due to human-to-human transmission. The epidemiological picture is consistent with sporadic zoonotic infections that are then amplified within healthcare premises. Large outbreaks linked to healthcare facilities are a feature of MERS-CoV and have occurred both within the Middle East, and in South Korea as a result of an imported case with delays in identification and multiple contacts. There is currently no evidence of sustained community transmission.

MERS-CoV in Kingdom of Saudi Arabia

In KSA, cases of MERS-CoV occur throughout the year, with occasional peaks, such as in April-May 2014 (coinciding with several large hospital outbreaks). During February and March 2015, a second peak of cases occurred, although the actual numbers reported were significantly lower than during the 2014 peak.

Recently there has been a marked increase in cases reported from KSA, particularly from Riyadh. This is mainly due to an outbreak related to the King Abdul Aziz Medical Centre – National Guard Hospital since 31 July 2015. As of 15 September 2015, 166 cases have been reported from Riyadh, many of which are considered related to this hospital. Although this reflects previous epidemiological patterns related to nosocomial exposures, there are additional community cases in Riyadh, highlighting MERS-CoV transmission within KSA. In addition, a recently imported case to Jordan from KSA has been associated with local onward transmission in Jordan, and is another indicator of the overall risk within KSA. Therefore, the situation in KSA warrants careful observation, particularly in light of the upcoming Hajj pilgrimage.

MERS-CoV in South Korea

On 27 July, the South Korean health authorities declared the local outbreak of MERS-CoV as over, following 186 cases and 36 deaths reported between 20 May and 4 July 2015. There have been no further cases since then. Confirmation is awaited from WHO that the South Korean outbreak has ended. This outbreak highlights the ability of MERS-CoV to cause large outbreaks in health care facilities, and the importance of the strict and prompt application of infection control measures when managing possible and confirmed cases of MERS-CoV.

Risk Assessment

There is a risk of imported cases to the UK from affected countries, and health professionals should remain vigilant. Early identification and implementation of infection control measures for suspected cases is crucial. South Korea will remain as an affected country within the UK case definition for MERS-CoV until WHO declare the outbreak as over. This is likely to be 28 days (ie two times the maximum incubation period of 14 days) after the last case has tested negative twice.

The risk of infection with MERS-CoV to UK residents in the UK remains **very low**.

The risk of infection with MERS-CoV to UK residents travelling to the Middle East is **low**.

The risk of infection with MERS-CoV to UK residents travelling to South Korea is **very low**.

The probability of MERS-CoV in those who come to the UK from, or return from, the Middle East, and meet the case definition for a “case under investigation” is **low**, but warrants testing for MERS-CoV infection.

The probability that a cluster of cases of severe acute respiratory infection of unexplained aetiology requiring intensive care admission is due to MERS-CoV remains **very low**, but warrants investigation and testing. A history of travel to the Middle East or South Korea would increase the likelihood of MERS-CoV.

The majority of outbreaks of MERS-CoV in the Middle East and South Korea have been linked to healthcare settings. The WHO has concluded that gaps in infection control measures have most likely contributed to these outbreaks and has recommended reinforcing the importance of strict adherence to recommended infection control measures in healthcare facilities.

Therefore, when UK infection control procedures have been followed correctly and promptly, the probability that a case of acute respiratory infection in a healthcare worker caring for a case of MERS-CoV is due to MERS-CoV is **very low**.

The risk will be higher in healthcare workers exposed to MERS-CoV who have not adhered to UK infection control procedures or not used adequate personal protective equipment.

The risk of MERS-CoV infection in a healthcare worker based in an ICU who meets the case definition for a “case under investigation” (by virtue of caring for patients with severe acute respiratory infection regardless of travel history or PPE use) is **very low**, but warrants testing.

The risk to contacts of confirmed cases of MERS-CoV infection is **low** but contacts should be followed up in the 14 days following exposure and any new febrile or respiratory illness investigated urgently.

Further information and guidance on MERS-CoV are available on the PHE website:

<https://www.gov.uk/government/collections/middle-east-respiratory-syndrome-coronavirus-mers-cov-clinical-management-and-guidance>

Travel Advice

All travellers to the Middle East are advised to avoid any contact with camels. Travellers should practice good general hygiene measures, such as regular hand washing with soap and water at all times, but especially before and after visiting farms, barns or market areas, and should avoid sick animals. Travellers are particularly advised to avoid raw camel milk and/or camel products from the Middle East. More generally, travellers are also advised to avoid consumption of any type of raw milk, raw milk products and any food that may be contaminated with animal secretions unless peeled and cleaned and/or thoroughly cooked. There are currently no UK travel restrictions in place to the Middle East but Hajj pilgrims should be aware of the advice of the KSA Ministry of Health (see below).

Travellers returning from the Middle East or South Korea with severe respiratory symptoms should seek medical advice and must state their travel history to the health professional, so that appropriate measures and testing can be undertaken. People who are acutely ill with an infectious disease are advised not to travel.

The Hajj

The annual Muslim pilgrimage to Mecca in KSA, known as the Hajj, will take place round the 20-25 of September 2015. The Saudi Ministry of Health recommends that people with underlying medical conditions that put them at greater risk of severe MERS-CoV illness, should consider postponing their travel. Further health advice regarding pilgrimages, including the Hajj and Umrah, is available at: <http://travelhealthpro.org.uk/hajj-and-umrah>

The 2014 Hajj pilgrimage took place in October with no reported increase in travel-related cases of MERS-CoV. Intensive surveillance during the 2013 Hajj did not identify any cases of MERS-CoV amongst an estimated 2 million pilgrims. However, several cases of MERS-CoV imported to countries outside of KSA in 2014, had returned from Umrah, a minor pilgrimage. The current situation in Riyadh may reflect wider MERS-CoV activity in the country, potentially increasing the risk associated with travel to KSA. Therefore any pilgrims returning from Hajj or Umrah, who develop severe respiratory symptoms within 14 days of return should seek medical advice, stating their recent travel. Health professionals should accordingly, remain alert for such individuals and follow PHE guidance for investigation and

management of possible MERS-CoV cases and prompt implementation of MERS-CoV infection control guidance.

PHE remains vigilant and closely monitors developments in the Middle East and in the rest of the world where new cases have emerged, and continues to liaise with international colleagues to assess whether our recommendations need to change.

PHE Case Definition – Possible case of MERS-CoV

Any person with severe acute respiratory infection requiring admission to hospital:

With symptoms of fever ($\geq 38^{\circ}\text{C}$) or history of fever, and cough

AND

With evidence of pulmonary parenchymal disease (eg. clinical or radiological evidence of pneumonia or Acute Respiratory Distress Syndrome (ARDS))

AND

Not explained by any other infection or aetiology

AND AT LEAST ONE OF

History of travel to, or residence in an area where infection with MERS-CoV could have been acquired in the 14 days before symptom onset*

OR

Close contact during the 14 days before onset of illness with a confirmed case of MERS-CoV infection while the case was symptomatic

OR

Healthcare worker based in ICU caring for patients with severe acute respiratory infection, regardless of history of travel or use of PPE

OR

Part of a cluster of two or more epidemiologically linked cases within a two week period requiring ICU admission, regardless of history of travel

*This definition includes all countries within the geographical Arabian Peninsula, plus countries with cases that cannot be conclusively linked to travel. As of 16/09/2015: Bahrain, Jordan, Iraq, Iran, Kingdom of Saudi Arabia, Kuwait, Oman, Qatar, United Arab Emirates, Yemen and South Korea.