Public Health England

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

***Updated: August 2015***

## Epidemiological update

As of 18 August 2015, 1413 cases of MERS-CoV have been reported to WHO with at least 502 related deaths. Most cases have been reported from the Arabian Peninsula particularly Saudi Arabia. Excluding the South Korean outbreak, 89% of all reported cases of MERS-CoV have been from Saudi Arabia. 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. There is currently no evidence of sustained community transmission.

## MERS-CoV in Saudi Arabia

In Saudi Arabia, cases of MERS-CoV occur throughout the year, with occasional peaks. The largest of these peaks occurred during April and May of 2014, and coincided 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. These peaks may represent an element of seasonality, although the mechanism for this is not currently understood

Recently there has been a surge in cases reported from Riyadh. As of 20 August, 62 cases have been reported from Riyadh alone since the beginning of the month, compared with 16 cases throughout July across Saudi Arabia. The vast majority of cases are associated with a single hospital in Riyadh. Sporadic cases and a family cluster have also been reported. This reflects previous epidemiological patterns related to nosocomial exposures. Community clusters are rare, but clusters within families have previously occurred. Although case numbers are not significantly high at the current time, the situation warrants careful observation, particularly in light of the upcoming Hajj pilgrimage as the increased case numbers in Riyadh may be an indicator of the overall risk in Saudi Arabia.

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## MERS-CoV in South Korea

On 27 July, the South Korean health authorities declared the local outbreak of MERS-CoV as over. Between 20 May and 4 July 2015, 186 cases were reported resulting in 36 deaths. All cases were epidemiologically linked through healthcare facilities to the initial imported case that arrived from the Middle East on 4 May. The South Korean outbreak highlights the ability of MERS-CoV to cause large outbreaks in health care facilities, and the importance of the strict 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, and health professionals should remain vigilant. Early identification and implementation of infection control measures for suspected cases is crucial. South Korea will remain as a country within the UK case definition for MERS-CoV until WHO declare the outbreak as over. This is likely to be 28 days (i.e. 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 or South Korea remains very low.

The probability of MERS-CoV in those who come to the UK from, or return from, the Middle East or South Korea, and meet the case definition for a “case under investigation” is low, but requires 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 have been linked to healthcare settings. A WHO mission to Saudi Arabia concluded that gaps in infection control measures have most likely contributed to these outbreaks; reinforcing the importance of strict adherence to recommended infection control measures in healthcare facilities. So far, all cases in South Korea are linked to healthcare facilties. Where UK infection control procedures have been followed, the probability that a case of severe acute respiratory infection in a healthcare worker caring for a case of MERS-CoV or that severe acute respiratory infection of unknown aetiology in a healthcare worker is due to MERS-CoV is very low, but warrants testing. 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 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 unnecessary 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. Travellers are 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.

Whilst the outbreak of MERS-CoV in South Korea is ongoing, travellers should practice good respiratory hygiene, including frequent hand washing, particularly if visiting healthcare premises. Travellers should follow the advice of local health authorities. There are currently no travel restrictions in place.

Travellers returning from the Middle East or South Korea with severe respiratory symptoms should seek medical advice and must mention their travel history 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 Saudi Arabia, 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 MERS-CoV, should consider postponing their travel. Further advice regarding pilgrimages, including the Hajj and Umrah, is available at http://www.nathnac.org/pro/factsheets/Hajj_Umrah.htm.

The 2014 Hajj pilgrimage took place in October with no reported increase in travel-related cases. 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 Saudi Arabia in 2014, had returned from Umrah, a minor pilgrimage.

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 (≥ $38^0$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 11/08/2015: Bahrain, Jordan, Iraq, Iran, Kingdom of Saudi Arabia, Kuwait, Oman, Qatar, United Arab Emirates, Yemen and South Korea.