

## 4 **INTERNATIONAL OUTBREAKS OF IMPORTANCE TO SOUTH AFRICAN TRAVELLERS AND HEALTHCARE WORKERS**

### a Middle East respiratory syndrome coronavirus (MERS-CoV) update

#### **Background**

Middle East respiratory syndrome coronavirus (MERS-CoV) is a recently identified respiratory virus which causes severe respiratory illness. It was first reported in Saudi Arabia in 2012. Since September 2012 and as of 12 June 2015, WHO has been informed of a total of 1289 laboratory confirmed cases of human infection with MERS-CoV including 455 related deaths.

The number of cases reported has increased sharply since May 2015 as a result of a new outbreak reported in South Korea. To date all the cases reported have been linked to countries in the Arabian peninsula. Middle East countries with laboratory confirmed cases include Jordan, Saudi Arabia, Yemen, United Arab Emirates (UAE), Qatar, Oman, Kuwait and Lebanon. Countries with travel-associated cases include United Kingdom (UK), Tunisia, Egypt, Greece, Germany, Italy, Algeria, Austria, Turkey, Netherlands, Malaysia, Philippines, United States of America (USA), China and South Korea. In South Africa, 37 samples were tested in 2015 and none of these have tested positive. It is important to consider this virus in the differential diagnosis of patients with severe pneumonia and a travel history to a geographically-implicated country in order to identify possible cases early and to allow for implementation of appropriate infection control procedures and public health response.

#### **MERS COV outbreak in South Korea**

On 20 May 2015, South Korea notified the WHO of the first laboratory-confirmed case in a 68-year-old man, who had recently travelled between four countries in the Middle East, from 18 April – 3<sup>rd</sup> May 2015. The index case was asymptomatic at the time of return to South Korea on 4<sup>th</sup> May 2015. He had no history of exposure to camels or contacts with MERS-CoV patients, or visit to any healthcare facilities while travelling in the Middle East. Investigation of the source of infection is ongoing [WHO website, updated 25 May 2015, Available from: <http://www.who.int/csr/don/24-may-2015-merskorea/en/>].

The index case had onset of symptoms on 11 May and had sought medical care at several healthcare facilities before a laboratory confirmation was made on the 20<sup>th</sup> May 2015. Since then, as of June 12, according to the Republic of Korea Ministry of Health, 125 secondary and tertiary cases of MERS-

CoV have been confirmed; one case travelled to China where he was hospitalised. In total 126 cases, including 11 deaths have been reported.

Although the cluster in South Korea is the largest identified outside the Arabian peninsula according to available WHO reports, all reported cases are epidemiologically linked to the index case, with transmission limited to other patients, healthcare workers, and visitors in healthcare facilities where case-patients received care. A similar pattern of spread has been reported before in other outbreaks like the nosocomial transmission that followed admission of one case in Jeddah in 2014.

#### **Presentation and clinical course**

Patients with MERS-CoV have presented with respiratory infections ranging from mild upper respiratory tract illness to severe lower respiratory disease, with the majority presenting with acute, serious respiratory illness with fever, cough, shortness of breath, and breathing difficulties. Some patients, especially those who are immunosuppressed have presented with fever and diarrhoea. More severe disease has been reported in patients with comorbidities. Primary cases were predominantly symptomatic, leading to high rates of admission to the hospital or intensive care unit, and death. Secondary infections led to lower rates of symptomatic illness and death, except in those who were already hospitalised. Complications have included severe pneumonia and acute respiratory distress syndrome requiring mechanical ventilation, multi-organ failure, renal failure requiring dialysis and pericarditis. The case fatality ratio is 39%.

#### **Transmission**

Although there is evidence that the dromedary camel is a host species for the MERS-CoV and that camels likely play an important role in the transmission to humans, the routes of direct and indirect transmission remain unknown. The virus has spread from person to person through close contact, such as caring for or living with an infected person. The majority of secondary cases are healthcare workers, close contacts of the cases who were visiting the health centres where cases were being cared for, and a number of patients in hospital that have likely become infected in the nosocomial setting. However, there is currently no evidence of sustained spread of MERS-CoV in community settings.

**Management**

There is no specific treatment for disease caused by MERS-CoV. However, many of the symptoms caused by this virus can be treated and therefore treatment should be based on the symptoms of the patient. There is no available vaccine for the virus yet.

**Precautions and infection prevention and control considerations**

The increase in numbers of recently-reported cases from healthcare workers and in hospital settings underscores the importance of infection control. Many of the identified cases continue to be caused by nosocomial exposure. When providing care to all patients with symptoms of acute respiratory infection and whenever specimens are collected from cases under investigation, the appropriate infection control guidelines should be followed. (WHO interim guidelines on infection prevention and control of epidemic- and pandemic-prone acute respiratory diseases in health care (2014)

[http://www.who.int/csr/bioriskreduction/infection\\_control/publication/en/](http://www.who.int/csr/bioriskreduction/infection_control/publication/en/)

WHO does not advise screening at points of entry or travel or trade restrictions.

Travelers returning from the Middle East and South Korea who develop respiratory symptoms either during or within 14 days of their return should seek medical care and inform their health care providers about their recent travel.

**Indications for testing**

The outbreak in South Korea and previous similar outbreaks highlight the continued risk of healthcare-associated transmission and the need for timely diagnosis and implementation of prevention and control measures. MERS-CoV should be suspected in anyone who develops fever and symptoms of respiratory illness, such as cough or shortness of breath, within 14 days after traveling from countries in or near the Arabian Peninsula and South Korea or to countries where MERS-CoV infection in human cases has been recently identified. This is particularly important for patients who have been in contact with health facilities in these countries. Details of case definitions, indications for testing and appropriate specimens for MERS-CoV can be accessed at the NICD webpage:

<http://www.nicd.ac.za/?page=guidelines&id=73>

**Additional information on MERS-CoV can be accessed at the following websites:**

WHO website: [http://www.who.int/csr/disease/coronavirus\\_infections/en/](http://www.who.int/csr/disease/coronavirus_infections/en/)

WHO website: <http://www.who.int/csr/don/12-june-2015-mers-korea/en/>

NICD website: <http://www.nicd.ac.za>

WHO website: [http://www.who.int/csr/bioriskreduction/infection\\_control/publication/en/](http://www.who.int/csr/bioriskreduction/infection_control/publication/en/)

CDC website: <http://www.cdc.gov/coronavirus/mers/>

**Source:** Centre for Respiratory Diseases and Meningitis, NICD-NHLS