

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

a **Middle East respiratory syndrome coronavirus (MERS-CoV): update and relevant information for South African healthcare professionals**

Background

Middle East respiratory syndrome coronavirus (MERS-CoV) is a recently-identified respiratory virus which causes severe respiratory illness, and was first reported in Saudi Arabia in 2012. Since September 2012 and as of 17 July 2015, the WHO has been notified of a total of 1 368 laboratory-confirmed cases of human infection with MERS-CoV, including 490 deaths. MERS-CoV transmission continues in the Middle East, with the highest number of cases reported from Saudi Arabia, the United Arab Emirates (UAE) and Oman. To date all the cases reported from outside the Middle East have either had a recent travel history to the Middle East or could be linked to a chain of transmission originating from a case with a travel history to the Middle East. Countries in the Arabian Peninsula 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, South Korea and Thailand.

MERS-CoV outbreak in South Korea

Korea has reported the largest outbreak of MERS-CoV outside of the Arabian Peninsula. Since May 2015 and as of 17 July 2015, the WHO has been notified of 186 MERS-CoV cases, including 36 deaths. The first laboratory-confirmed case was a 68-year-old man who had recently travelled between four countries in the Middle East from 18 April – 03 May 2015. Following this single imported case, all of the infections known to have occurred in South Korea have taken place in healthcare facilities and all cases have been linked to a single chain of transmission. The median age of cases is 55 years (range 16 to 87 years) and the majority of cases are male (59%). There have been no new cases reported since 04 July 2015. For the latest update on MERS-CoV cases, click on the WHO link below: http://www.who.int/csr/disease/coronavirus_infections/en/.

Situation in South Africa

In South Africa, 50 samples have been tested for MERS-CoV for 2015 to date, and none have tested positive. Of the suspected cases investigated, 26% (13/50) were positive for influenza virus. The

majority of the suspected cases, 72% (36/50), were identified and tested at point of entry to South Africa (OR Tambo International Airport).

Transmission

Although it is likely that zoonotic transmission is the starting point of most clusters, human-to-human transmission, though not sustained, seems to be the dominant mode of transmission for MERS-CoV. Almost all new cases are generated in healthcare facilities or among family members.

Precautions and infection prevention and control considerations

The WHO does not advise screening at points of entry or travel or trade restrictions. Travellers 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 healthcare providers about their recent travel.

Nosocomial transmission has been a hallmark of MERS-CoV, underscoring the critical importance of infection prevention and control (IPC). Appropriate IPC measures should be used while managing all patients with symptoms of acute respiratory infection, and whenever specimens are collected from cases under investigation. The WHO has published interim guidelines on infection prevention and control of epidemic- and pandemic-prone acute respiratory diseases in health care (2014) which can be accessed at:

http://www.who.int/csr/bioriskreduction/infection_control/publication/en/.

Indications for testing

The current MERS-CoV outbreak in South Korea highlights 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 any person who develops fever and symptoms of respiratory illness (such as cough or shortness of breath) within 14 days after travelling 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. Although the majority of cases have presented with severe disease, it is important to note that MERS-CoV can also present as a mild

illness. The case definitions for identifying patients to be investigated for MERS-CoV (referred to as a Patient Under Investigation (PUI)) have been

revised. A person with both clinical features AND epidemiologic risk should be considered a PUI as described below:

Clinical features		Epidemiologic risk
<p><u>Severe illness:</u> Fever ($\geq 38^{\circ}\text{C}$) and cough with pneumonia or acute respiratory distress syndrome (ARDS) (based on clinical or radiologic evidence)</p>	AND	<p>History of travel within 14 days before onset of illness to the Arabian peninsula¹ or in countries where MERS-CoV is known to be circulating or where human infections have recently occurred</p> <p style="text-align: center;">OR</p> <p>Close contact² with a symptomatic traveller who developed fever and acute respiratory illness within 14 days after travelling from countries in or near the Arabian peninsula</p> <p style="text-align: center;">OR</p> <p>A history of being in a healthcare facility, within 14 days before onset of illness, in the country where hospital-associated-MERS-CoV infections have been reported</p> <p style="text-align: center;">OR</p> <p>The disease is in a cluster³ that occurs within a 14 day period, without regard to place of residence or history of travel, unless another aetiology has been identified.</p>
<p>A person with acute respiratory illness of any degree of severity</p>	AND	<p>Within 14 days before onset of illness, had any of the following exposure:</p> <p>Close physical contact² with a confirmed or probable case MERS-CoV infection, while that patient was ill</p> <p style="text-align: center;">OR</p> <p>A healthcare facility in a country where hospital-associated MERS-CoV infections have been reported e.g. South Korea.</p>

¹ Arabian peninsula and neighbouring countries include: Iraq, Iran, Bahrain, Israel, the West Bank, and Gaza; Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syria, The United Arab Emirates (UAE) and Yemen

²Close contact:

- Being within 2 meters/within the room or care area for a prolonged period of time (e.g health personnel, household members) while not wearing recommended personal protective equipment (gloves, gowns, N95 mask, eye protection); or
- Having direct contact with infectious secretions (e.g. being coughed on) while not wearing recommended personal protective equipment (gown, gloves, eye protection, N95 mask). Data on close contact is limited, currently brief interactions (walking past a person, are considered low risk and do not constitute close contact).

³A 'cluster' is defined as two or more persons with onset of symptoms within the same 14 day period, and who are associated with a specific setting, such as a classroom, workplace, household, extended family, hospital, other residential institution, military barracks or recreational camp.

A confirmed case: a PUI with a laboratory confirmation of infection with MERS-CoV.

A probable case: a PUI with absent or inconclusive results for MERS-CoV infection who is a close contact of a laboratory-confirmed case. Examples of inconclusive laboratory results are a negative test on an inadequate specimen or a positive test on an assay with limited performance data available.

Case definitions are a guide to who should be tested. Where there is doubt about clinical presentation or history, cases should be discussed with the Centre for Respiratory Diseases and Meningitis at the NICD-NHLS, through the NICD Hotline (082 8883 9920, a 24-hour service for healthcare professionals). Clinicians should be alert to the possibility of atypical presentations in patients who are immuno-

compromised.

Additional resources and updates:

- World Health Organization website: http://www.who.int/csr/disease/coronavirus_infections/en/index.html
- http://www.who.int/csr/bioriskreduction/infection_control/publication/en/
- CDC website: <http://www.cdc.gov/coronavirus/index.html>
- NICD website: <http://www.nicd.ac.za>

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