



Epidemiological Alert

Middle East respiratory syndrome coronavirus (MERS-CoV)

5 June 2015

The Pan American Health Organization / World Health Organization (PAHO/WHO) recommends that Member States, in light of the possible occurrence of events related to the Middle East respiratory syndrome coronavirus (MERS-CoV), ensure that health care workers have access to up to date information on the illness, be familiar with the principles and procedures for handling MERS-CoV infections, and be trained to inquire about a patient's travel history in order to connect this information with clinical data.

PAHO/WHO does not recommend any particular type of screening at entry points regarding this event, nor any restrictions on travel or trade.

The Middle East respiratory syndrome (MERS) is a viral respiratory illness caused by a new coronavirus (MERS-CoV) that was detected for the first time in Saudi Arabia in 2012. From that time up to 5 June 2015, a total of 1,185 cases have been laboratory confirmed, including 443 deaths. Of the cases of human infection with MERS-CoV, 7 out of 10 are male (n= 1,165) and the average age is 49 years old (ranging from 9 months old to 99 years old).

Most human cases of MERS-CoV infection have been attributed to infection from one person to another. The virus does not spread easily from one person to another unless there is close contact, such as when treating a patient without proper protection.

Some scientific studies suggest that camels are an important reservoir for MERS-CoV and the animal source of infection in humans. However, the specific role of camels in the transmission of the virus, and also the exact route or routes of transmission is unknown.

To date, 25 countries from 5 continents¹ have reported cases; the majority of these (> 85%) were recorded in Saudi Arabia. From 1 January to 5 June 2015, a total of 239 new cases and 86 deaths were reported among 10 countries: China, Germany, Iran, Jordan, Oman, the Philippines, Qatar, the Republic of Korea, Saudi Arabia, and the United Arab Emirates.

On 3 June 2015, the WHO updated the risk assessment of this event following the outbreak in the Republic of Korea which began with a person who traveled to the Middle East (Saudi Arabia, Qatar, the United Arab Emirates and Bahrain). This is the largest outbreak of MERS-CoV outside the Middle East. Thus far, there have been 36 confirmed cases of MERS-CoV infection and three deaths related to this outbreak (case fatality rate 8%). More than 1,500 contacts are being monitored. Included among the confirmed cases are: health care workers who attended the confirmed case, other patients who were being treated at the same health care

¹ Africa: Algeria, Egypt, and Tunisia; Asia: China, Iran, Jordan, Kuwait, Lebanon, Malaysia, Oman, the Philippines, Qatar, the Republic of Korea, Saudi Arabia, Turkey, the United Arab Emirates (UAE), and Yemen; Europe: Austria, France, Germany, Greece, Italy, the Netherlands, and the United Kingdom; the Americas: the United States of America.

facilities as the index case, family members and close contacts of cases. Tertiary transmission cases have occurred.

Recommendations

In light of this situation, PAHO/WHO reiterates the recommendations made in the [May 2013 Epidemiological Alert](#) encouraging Member States to strengthen surveillance activities to detect any unusual health event, including those that might be associated with MERS-CoV. Health professionals should be informed about the possibility of the occurrence of infection caused by this virus and the actions to be implemented in case of a suspected case.

Clinicians should have access to information for the appropriate clinical management of patients with acute respiratory failure and septic shock as a result of severe infection caused by MERS-CoV, with special attention to measures to prevent the spread in health care facilities.

PAHO/WHO urges Member states to implement and continue to follow infection control procedures to reduce or minimize the occurrence of infections in health care setting including those associated with MERS-CoV. Further detail is provided below of additional measures to consider.

Epidemiological Surveillance

Given that the clinical presentation of MERS-CoV infection is similar to other respiratory infections caused by viruses, cases are not always suspected and identified early. Therefore, strict compliance with the measures of prevention and infection control is essential.

PAHO/WHO recommends all Member States to strengthen surveillance for severe acute respiratory illness (SARI) and to carefully review any unusual patterns.

Additionally, health care workers must be trained to ask patients about their travel history and to connect this information with the patient's symptoms. The recently reported cases stress the need for health care workers to suspect MERS-CoV infection in travelers who present a clinical picture compatible with MERS-CoV and have recently returned from areas where the virus has been circulating.

An epidemiological investigation and laboratory testing for MERS-CoV should be undertaken for persons with the following criteria:

- a) Any person with acute respiratory disease of any severity, within 14 days before the onset of the disease, who had close contact² with a probable or confirmed MERS-CoV infection case while the case had the disease.
- b) Any person with a clinical picture compatible with severe acute respiratory infection, for which infection by known respiratory viruses has been ruled out, and who in the last 14 days before the onset of symptoms has been in areas where the virus has been circulating.

² Close contact includes:

- Any person who provided care to a probable or confirmed case, including health care workers or family, or who had other similar close physical contact.
- Any person who was in the same site (e.g. residing or visiting) to a probable or confirmed case in the period in which the case presented symptoms. .

International reporting cases

National authorities are requested to report all probable and confirmed MERS-CoV infection cases within 24 hours of classification to the WHO IHR Regional Contact Point.

For the purposes of classification and notification, the current definitions for probable and confirmed cases are available at:

http://www.who.int/csr/disease/coronavirus_infections/case_definition/en/index.html

Laboratory testing for infection caused by MERS-CoV

PAHO/WHO encourages Member States to follow the WHO interim recommendations for laboratory testing for MERS-CoV. The general recommendations for the laboratory diagnosis are available on the PAHO/WHO website at:

http://www.paho.org/hq/index.php?option=com_docman&task=doc_download&gid=30509&Itemid=270&lang=en

Any laboratory testing for the presence of this virus should be performed according to the capacity of the national laboratory system, in appropriately equipped laboratories by staff trained in the relevant technical and biosafety procedures (under BSL2 conditions, only for molecular assays).

When diagnostic capability is not available at the national level, PAHO/WHO recommends that samples of any unusual or unexpected SARI case or SARI cluster with unexplained etiology, including suspected cases of MERS-CoV, should be forwarded immediately to the WHO Collaborating Center for influenza and other respiratory viruses, at the United States Centers for Disease Control and Prevention (U.S. CDC) for additional testing.

Clinical management

To date, knowledge about the clinical features of MERS-CoV infection is limited and there is no prevention or specific treatment for the virus (e.g., vaccine or antiviral), however, WHO has established a series of interim recommendations for the management of these patients in line with the management of severe acute respiratory infections.³ In December 2013, WHO convened an international network of clinical experts to discuss treatment options, such as the use of convalescent plasma or highly neutralizing antibodies against MERS-CoV. Currently, there are no evidence based clinical studies to recommend these options. WHO and the International Consortium of Emerging Infections and Severe Acute Respiratory Infection have developed and made available research protocols and forms for clinical research on emerging diseases that cause serious respiratory syndromes, such as MERS-CoV, avian influenza A(H5N1), and avian influenza A(H7N9). The detailed objectives and methodology are available at: <http://www.prognosis.org/isaric/>.

Infection prevention and control in health care

PAHO/WHO stresses the importance of the rigorous application of health care infection prevention and control measures and recommends Member States follow the provisional WHO guidelines for infection prevention and control during health care of probable or confirmed

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http://www.who.int/csr/disease/coronavirus_infections/InterimGuidance_ClinicalManagement_NovelCoronavirus_11Feb13u.pdf?ua=1

MERS-CoV cases. These guidelines are available at: http://www.who.int/csr/disease/coronavirus_infections/IPCnCoVguidance_06May13.pdf?ua=1

Personal protective equipment for specific procedures must be used according to the assessment of risk.

Further details and recommendations for infection prevention and control of epidemic and pandemic-prone infections are available on the WHO website: http://apps.who.int/iris/bitstream/10665/112656/1/9789241507134_eng.pdf

International travel and trade

PAHO/WHO does not advise the implementation of health screening at points of entry in relation to this event, nor that any international travel or trade restrictions be applied.

References

1. WHO – Disease Outbreak News. Available at: <http://www.who.int/csr/don/en/index.html>
2. WHO – Summary and risk assessment of current situation in Republic of Korea and China : Available at: http://www.who.int/csr/disease/coronavirus_infections/risk-assessment-3june2015/en/
3. WHO – Update on MERS-CoV transmission from animals to humans, and interim recommendations for at-risk groups. Available at: http://www.who.int/csr/disease/coronavirus_infections/MERS_CoV_RA_20140613.pdf?ua=1

Related links:

- WHO - Coronavirus Infections: http://www.who.int/csr/disease/coronavirus_infections/en/