

# Middle East Respiratory Syndrome Outbreak Threat Becomes More Urgent

Masoud Mardani<sup>1,\*</sup>

<sup>1</sup>Infectious Diseases and Tropical Medicine Research Center, Shahid Beheshti University of Medical Sciences, Tehran, IR Iran

\*Corresponding author: Masoud Mardani, Infectious Diseases and Tropical Medicine Research Center, Shahid Beheshti University of Medical Sciences, Tehran, IR Iran. Tel: +98-2122439963/8, Fax: +98-2122439964, E-mail: masoud\_mardani@ymail.com

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In 2012, a novel human coronavirus, named the Middle East respiratory coronavirus (MERS-CoV) was reported as the etiology of severe community-acquired pneumonia (1). Since then sporadic cases and asymptomatic infections continued to be detected in countries of the Arabian Peninsula with a few travel-associated cases imported elsewhere. In the past two months, a notable increase has occurred in the number of cases of MERS-CoV infection reported in countries of or near the Arabian Peninsula, as well as an increase in countries reporting imported cases. This development prompted a review on May 13th, 2014 by the WHO Emergency Committee, which noted no sustained chains of human-to-human transmission, yet registered concern about the trend. Two imported cases with an additional secondary case in a contact who seroconverted have now been reported in the US in the past month (2, 3).

Both upper and lower respiratory tract infection have been described. The severity of pneumonia has varied from mild to clinically necessitating hospitalization, ICU management and ventilator support. Kidney failure has developed in some cases. Gastrointestinal (GI) symptoms have included nausea, vomiting and diarrhea and may precede respiratory symptoms. Asymptomatic infections have been noted mainly through contact investigations. As of May 2014, Parviz Jafari has reported 614 laboratory confirmed cases of which 181 have been fatal (4). Healthcare workers (HCWs) account for 19% of cases (2). For secondary cases of human-to-human transmission, the median incubation period was five days (range 3-12 days) (2).

It is suggested that people who meet these criteria should be tested for MERS-CoV; fever and pneumonia or acute respiratory distress syndrome (ARDS) with one of the following; travel in the past 14 days to countries of or near the Arabian Peninsula, close contact with an ill traveler who had fever and acute respiratory illness (not necessarily pneumonia) with the same travel history as

above and close contact with a confirmed or probable MERS case, ill at the time of contact (5).

A real-time RT-PCR assay for MERS-CoV is available in reference laboratory health departments. Specimens for rRT-PCR testing include specimens from the upper and lower respiratory tract (for example, nasopharyngeal swab, sputum, Bronchoalveolar lavage), blood and stool (6). If within 14 days of symptom onset, multiple specimens should be obtained from different sites and at different intervals from symptom onset for rRT-PCR testing. MERS-CoV viral load and genome yield were higher in specimens of lower respiratory tract origin (7). Serology is included if more than 14 days from onset has elapsed. Interpretation of MERS-CoV laboratory results is provided with case definition (8).

Suspected MERS cases can be simultaneously tested for other causative agents of pneumonia as clinically appropriate. MERS-CoV is not expected to be detected on rapid viral respiratory panels (RVP) commercially available in the US (5).

Patients with known or suspected infection with MERS-CoV should take combined standard, contact and airborne precautions (9). Gowns, gloves, face shield or goggles for eye protection and N-95 or greater respirator or equivalent level of protection should be worn while caring for the patient. The duration for such precautions is not known. A facemask should be worn by the patient when away from airborne isolation to facilitate source control. HCWs caring for confirmed or suspected cases of MERS-CoV infection should monitor themselves for 14 days after last contact with the patient for any symptoms of acute illness (9). HCWs who become symptomatic should not report for work. Those HCWs who were not wearing personal protective equipment (PPE) and were exposed to a confirmed or probable MERS-CoV infected patient should be considered for monitoring and self-quarantine at home (9).

Infectious disease (ID) specialists need to underscore the changing epidemiology of MERS-CoV infections to the administration and core personnel of the facilities in which they work, emphasizing the need to proactively improve readiness. Helpful checklists for MERS preparedness have been developed for providers and for healthcare facilities. These can promote prompt review of facility pandemic influenza plans with guidance from ID specialists on modifications as appropriate for MERS-CoV (10, 11).

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