

## The emerging threat of MERS

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Middle East Respiratory Syndrome (MERS) is a viral respiratory illness caused by a Middle East Respiratory Syndrome Coronavirus (MERS-CoV). It is a specie of the genus Beta coronavirus, originally termed novel coronavirus.<sup>1</sup> As of June 2014, MERS-CoV cases have been reported in 22 countries mostly belonging to the Arabian peninsula.<sup>2,3</sup> Virologist Dr. Ali Mohamed Zaki isolated and identified the first established case in Saudi Arabia in 2012.<sup>4,5</sup> The Centers for Disease Control and Prevention (CDC) has labelled it as a transmissible disease from human-to-humans. It is known to be transmitted from infected people to others through close contact, such as those in healthcare settings caring for and those living with an infected persons.<sup>6</sup> Close contact is defined as being within about 6 feet (2 meters) or within the room for an extended period of time, while not wearing recommended personal protective equipment (that is, gloves, gowns, respirator, eye protection); or b) having direct contact with infectious secretions while not wearing recommended personal protective equipment. Till now, brief interactions, for instance, walking by a person, are not considered high risk and do not constitute close contact.<sup>7</sup>

MERS presenting symptoms have not yet been defined comprehensively often including prodromal symptoms of fever, myalgias and headache for the first 3-7 days followed by respiratory symptoms including non-productive cough and shortness of breath and eventually progressing to cause respiratory and kidney failure. Almost 40% of those infected do not survive the disease with the rest requiring ICU admission, mechanical ventilation and dialysis.<sup>4,6</sup> The median age of patients with lab-confirmed MERS-CoV infection is 49 years (range = <1-94 years); 346 (65%) cases are male patients with majority of those being affected belong to those who care and come in contact with the infected patients. The disease manifestation ranges from mild to severe and symptomatic to asymptomatic presentations. About 62% cases presenting with respiratory symptoms required hospitalization, 5% had mild symptoms and did not require hospitalization, whereas 21% were

asymptomatic.<sup>7</sup> One study reported, " we cannot conclude whether the people on the farm were infected by the camels or vice versa, or if a third source was responsible."<sup>8</sup>

The virus has infected 723 people and killed 302 people in Saudi Arabia since it first emerged in 2012. At its peak in April-May 2014, the World Health Organization (WHO) was considering declaring MERS a public health emergency.<sup>3,4,6</sup> Health-care providers have a significant role in identifying and diagnosing it in patients with symptoms suggestive of MERS and in those who develop respiratory symptoms within 2 weeks after traveling from countries either near or within the Arabian Peninsula.<sup>7</sup>

To increase the probability of detecting MERS-CoV infection, CDC recommends collecting several specimens after the onset of symptoms, from diverse sites at different times. For patients who are suspected as MERS cases, health-care providers need to collect the oropharyngeal swab, nasopharyngeal swab, sputum, serum, and stool/rectal swab specimens and send them to the public health laboratory. Moreover, collection of lower respiratory specimens is suggested as MERS-CoV infection has been confirmed in sputum of people who had tested negative by the PCR for MERS-CoV in nasopharyngeal/oropharyngeal specimens. Health care providers collecting these specimens need to wear recommended personal protective equipment when collecting specimens and should alert their state or local health departments if they suspect MERS-CoV infection, which in turn must notify CDC of patients under investigation and also those who have tested positive.<sup>7</sup>

Recent travelers might seek medical care by international air connections and all health care providers need to be alert, counting those outside of cities with the highest number of arriving travelers from the Arabian Peninsula. Health-care providers globally should be prepared to consider, detect, and manage cases of MERS.<sup>7</sup>

As people from all over the globe travel to these high risk areas and then back to their home country, the challenge remains to prevent this virus from infecting these travelers and thereby, spreading MERS worldwide. Strict monitoring at the airports, filling of forms about any recent history of flu suffered by passengers, coming from

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these areas; reporting any suspected MERS case, is essential in preventing further outbreaks.

### Disclosure

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