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RISKTOPICS

Strategies for Addressing the Middle East Respiratory Syndrome (MERS) Threat

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Although most of the cases of MERS have occurred in the Middle East, this disease raises some important implications for the healthcare industry and businesses in general due to the concern that it may become a global pandemic outbreak. This Risktopic outlines some of the strategies that can be used to address this threat.

INTRODUCTION

Middle East Respiratory Syndrome (MERS) is an acute viral respiratory illness caused by a novel coronavirus. It appeared in Saudi Arabia in 2012 and since that time, MERS has spread significantly in the Middle East and on a limited basis to Europe, Asia and the United States. So far, the cases outside the Middle East have all had a connection to travel in the Middle East either through direct travel or contact with a recent traveler. According to the World Health Organization (WHO), the number of cases of MERS has risen steadily and as of the writing of this Risktopic, over 680 cases have been documented. It has a rather high mortality rate, with death occurring in roughly 30% of the confirmed disease cases. It is for this reason that concern has been raised that MERS may become a pandemic threat.

This Risktopic provides background on the current assessment of MERS and provides guidance for businesses in addressing the MERS threat. As with any emerging disease outbreak, the information on MERS is changing and current references should be monitored periodically for up to date information. A list of useful references is included at the end of this document.

DISCUSSION

MERS is a member of the coronavirus family. Coronaviruses are a large family of viruses that can cause diseases from the common cold to the Sudden Acute Respiratory Syndrome (SARS) that occurred primarily in Asia in 2002-2003. Reports of MERS first appeared in September 2012 in Saudi Arabia and the incidence of the disease has increased since that time, with the largest incidence occurring recently. The virus seems to be circulating widely throughout the Arabian Peninsula. Any cases noted outside of this area have been tied to individuals who have traveled to or been in contact with persons in the region. MERS should not be confused with MRSA, Methicillin-resistant *Staphylococcus aureus,* which is a bacterium that is resistant to many antibiotics and is not related to this virus.

Typical symptoms of MERS are fever, cough and shortness of breath. Pneumonia is also common. Gastrointestinal symptoms, such as diarrhea, are less common. Severe illness can include respiratory failure, requiring mechanical ventilation and other organ failure. The virus appears to cause more severe disease in people with weakened immune systems, older people and those with chronic diseases such as diabetes, cancer and chronic lung disease. The incubation period for MERS averages about 5 days, but can range from 2 to 13 days.

The source of the virus seems to be dromedary camels that are plentiful in the Arabian Peninsula and used for animals of burden as well as a source of food. Many of the confirmed cases have had a connection to camels, camel milk or camel meat. Other animal sources (such as bats) may also be involved. Another importance source of transmission has been in the healthcare setting where the use of standard precautions has not been universally followed until relatively recently. Most incidences of MERS have been transmitted through contact with live animals (camels) or close contact with care givers either in the home or healthcare setting. Currently, the WHO believes that human to human transmission of MERS is generally limited to these situations.

According to the WHO, cases of MERS have been concentrated in Saudi Arabia, but have also occurred in Jordan, Kuwait, Lebanon, Oman, Qatar, the United Arab Emirates and Yemen. Countries with travel related cases include: Egypt, France, Iran, Italy, Greece, Malaysia, Netherlands, Tunisia, Turkey, the United Kingdom and the United States. Upcoming events may also impact the spread of MERS. Of particular interest are the upcoming stream of pilgrims to MECCA related to the Muslim holy month of Ramadan which begins in late June and the hajj pilgrimage which begins in early October. While the number of cases of MERS near MECCA has been low, there have been a higher number of cases in Jeddah, Saudi Arabia, which is the location of the nearest international airport.

The spread of MERS has been limited outside of the Arabian Peninsula and neither the WHO nor the US Centers for Disease Control (CDC) have issued any travel restrictions. Both groups do suggest that travelers to the Middle East use caution and avoid farms, live animal markets or other areas where live camels are present, practice good personal hygiene, particularly hand washing, and avoid contact with individuals who are ill. Travelers are also advised to monitor their health and seek immediate medical attention if any respiratory symptoms occur.

GUIDANCE

The following suggestions are based on information from the WHO and CDC as best practices for preparing for and addressing the MERS threat.

Healthcare Setting:

- Information regarding the MERS threat and appropriate actions to be taken should be communicated to all staff that may have potential patient contact. In addition, as appropriate, staff should be retrained on skills for infection prevention and control.
- Frontline healthcare providers (particularly ER, intake and primary care workers) should be acutely aware of the symptoms of MERS and prepared to implement standard (or universal) precautions when warranted. Staff should inquire about travel or recent contact with travelers when evaluating patients.
- Standard (or universal) precautions should be followed for all patients presenting with respiratory illness even prior to detailed examination or laboratory testing. This includes both patients and staff using surgical type masks for droplet protection and practicing good personal hygiene (particularly hand washing).
- Once MERS is suspected, the patient should be moved to an isolation type room and staff should follow contact precautions and use eye protection. Airborne precautions should be followed when performing aerosol generating procedures. This may include the use of fit tested N95 respirators.
- Exposure of staff and family members to patients with suspected or confirmed cases of MERS should be controlled. This not only prevents transmission of MERS to staff and family, but also minimizes the chance of patient co-infection with other pathogens.
- Timely reporting of every confirmed case of MERS should be made to the local public health authorities including the CDC.
- Staff who have had unprotected exposure to a confirmed MERS patient and are asymptomatic should be examined and if possible furloughed for 14 days. If this is not possible due to staffing issues, the staff members should wear a surgical mask for 14 days. If symptoms occur, the staff member should seek immediate treatment.
- Staff who had protected exposure to a confirmed MERS patient should monitor for symptoms for 14 days following exposure. If symptoms occur, seek immediate treatment.

General Business Setting:

- Exposure to MERS in the general business setting should be much less than that in the healthcare industry.
- Employees who have traveled to the Middle East should monitor themselves for symptoms for 14 days. If these employees develop symptoms, they should not come to work, seek medical attention immediately and use a surgical mask, if available, to minimize possible disease spread. Employees should report the recent travel and/or contact with others in or who have traveled to the Middle East to their healthcare provider.
- Currently neither the WHO nor the CDC have suggested travel restrictions to the Middle East, but they have issued alerts that suggest:
    - Individuals planning to work/meet in a healthcare setting should carefully follow standard precautions and infection control.
    - Travelers should avoid contact with camels at farms or other attractions and assure that any camel milk consumed is pasteurized and camel meat is cooked thoroughly
    - Avoid close contact with sick people
    - Ensure good personal hygiene (particularly thorough hand washing) and respiratory etiquette
- Employees traveling to the Middle East should consult with their physician regarding appropriate vaccinations and other inoculations before the trip.
- If employees traveling in the Middle East note symptoms, they should seek medical care locally before returning home. This helps minimize the chances of disease spread while traveling. If possible, they should use healthcare facilities with a good track record of infection control. Travel protection services, if engaged prior to travel, may assist in identifying appropriate medical providers and in providing other assistance to the traveler.

Should an employee or visitor become ill while on premises, cleaning staff should use EPA suggested disinfectants and cleaning methods.

CONCLUSION

The current MERS outbreak is largely limited to the Arabian Peninsula and has been associated with contact with camels and secondary infections from close contact by caregivers either at home or in the healthcare setting. Cases outside the Middle East have been tied to travel to the region or close contact with an individual who had recent travel to the region. Standard precautions should be used universally to minimize potential disease spread by sick individuals. Healthcare facilities should be proactive in staff education and patient treatment. Other businesses should educate employees who will be traveling in the Middle East. As with any emerging disease outbreak, the information on MERS is changing and current references should be monitored periodically for up to date information. A list of useful references is included below.

RELATED MATERIALS

Zurich Risktopics:

- Overseas Travel Safety and Security
- Cleaning and disinfection plans during an influenza outbreak
- Influenza Outbreak: What your business should be doing

REFERENCES

World Health Organization: http://www.who.int/csr/disease/coronavirus_infections/en/

U.S. Centers for Disease Control: http://www.cdc.gov/niosh/topics/healthcare/

University of Minnesota Center for Infectious Disease Research and Policy (CIDRAP): http://www.cidrap.umn.edu/

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