Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

departments with questions should contact the CDC Emergency Operations Center (770-488-7100).

Section editors: David A. Talan, MD; Gregory J. Moran, MD; Daniel Feikin, MD

Author affiliations: From the Olive View–UCLA Medical Center, Sylmar, CA.

<http://dx.doi.org/10.1016/j.annemergmed.2013.06.002>

REFERENCES

1. Danielsson N, Team EIR, Catchpole M. Novel coronavirus associated with severe respiratory disease: case definition and public health measures. *Euro Surveill*. 2012;17.
2. Zaki AM, van Boheemen S, Bestebroer TM, et al. Isolation of a novel coronavirus from a man with pneumonia in Saudi Arabia. *N Engl J Med*. 2012;367:1814-1820.
3. Centers for Disease Control and Prevention. Severe respiratory illness associated with a novel coronavirus—Saudi Arabia and Qatar, 2012. *MMWR Morb Mortal Wkly Rep*. 2012;61:820.
4. World Health Organization. *Global Alert and Response (GAR): Novel Coronavirus Infection—Update*. Geneva, Switzerland: World Health Organization; 2013. Available at: http://www.who.int/csr/don/2013_03_06/en/index.html. Accessed June 11, 2013.
5. European Centre for Disease Prevention and Control. *Rapid Risk Assessment: Severe Respiratory Disease Associated With a Novel Coronavirus*. Stockholm, Sweden: European Centre for Disease Prevention and Control; 2013. Available at: <http://www.ecdc.europa.eu/en/publications/publications/novel-coronavirus-rapid-risk-assessment-update.pdf>. Accessed June 11, 2013.
6. Health Protection Agency. *Update on Family Cluster of Novel Coronavirus Infection in the UK*. London, United Kingdom: Health Protection Agency; 2013. Available at: <http://www.hpa.org.uk/newscentre/nationalpressreleases>. Accessed June 11, 2013.
7. Health Protection Agency. *Case of Novel Coronavirus Identified in the UK*. London, United Kingdom: Health Protection Agency; 2013. Available at: <http://www.hpa.org.uk/newscentre/nationalpressreleases>. Accessed June 11, 2013.
8. European Centre for Disease Prevention and Control. *Epidemiological Update: Case of Severe Lower Respiratory Tract Disease Associated With a Novel Coronavirus—February 11, 2013*. Stockholm, Sweden: European Centre for Disease Prevention and Control; 2013. Available at: http://www.ecdc.europa.eu/en/press/news/lists/news/ecdc_dispform.aspx?list=32e43ee8%2de230%2d4424%2da783%2d85742124029a&id=841&rootfolder=%2fen%2fpress%2fnews%2flists%2fnews. Accessed June 11, 2013.
9. Health Protection Agency. *Further UK Case of Novel Coronavirus*. London, United Kingdom: Health Protection Agency; 2013. Available at: <http://www.hpa.org.uk/newscentre/nationalpressreleases>. Accessed June 11, 2013.
10. Health Protection Agency. *Third Case of Novel Coronavirus Infection Identified in Family Cluster*. London, United Kingdom: Health Protection Agency; 2013. Available at: <http://www.hpa.org.uk/newscentre/nationalpressreleases>. Accessed June 11, 2013.

COMMENTARY

[Ann Emerg Med. 2013;62:270-271.]

Acute respiratory tract infection is a common reason prompting an emergency department (ED) visit. Although these

illnesses are almost always caused by known respiratory pathogens, emergency physicians should recognize the risk of novel pathogens and be familiar with current recommendations for evaluating patients who may be infected with emerging pathogens from specific geographic areas. This report of a new coronavirus (now referred to as Middle East respiratory syndrome coronavirus, or MERS-CoV) identified in patients in the United Kingdom after travel to the Arabian Peninsula illustrates some important points about identifying infections with novel pathogens and implementing infection control procedures when specific transmission risk may be unknown. The 3 confirmed cases demonstrate that the virus has the capability of human-to-human transmission and coinfection with another pathogen (influenza A).¹ Subsequent clusters of disease confirm that the novel coronavirus can spread from person to person, including from patients to health care workers. Although MERS-CoV has a different genetic sequence than the virus that caused SARS, the implications for emergency medicine are similar.²

Health care providers, hospital administrators, and global health organizations learned many important lessons during the 2003 SARS outbreak. The subsequent improvement in infection control measures is especially important for the ED in the event of infectious outbreaks with new pathogens. Transmission in the health care setting to a large number of health care workers and other patients was a notable feature of the SARS coronavirus. The greatest risk of transmission was to individuals who had close contact with infected subjects and who were not properly trained in the use of protective equipment.³ Exposure of health care providers to procedures that aerosolized droplets such as nebulizers, suctioning, and intubation was another source of virus transmission.⁴ N95 respirators may offer protection to individuals involved in high-risk procedures.⁵

CDC recommendations for respiratory hygiene/cough etiquette evolved during the SARS outbreak. These concepts have since been incorporated into CDC planning documents for SARS and pandemic influenza. Although basic precautions such as hand washing are intended for health care workers associated with direct patient contact, respiratory hygiene/cough etiquette applies to everyone in the hospital setting: providers, patients, and visitors.⁶ This concept was developed in response to observations that visitors and patients without diagnoses were contributing to hospital transmission.³ Recommendations included posted signs in different languages about containment of respiratory secretions, convenient hand sanitizers and tissue receptacles, and sitting at least 3 feet apart if coughing. Screening patients with respiratory symptoms for recent travel, placing a mask, and isolation from others in the waiting room/ED are important for early detection and prevention.⁷ For pathogens that emerge in specified geographic areas, risk assessment is based on where the organism is currently circulating, ie, within the local community, limited geographic areas, or not actively circulating anywhere in the world.⁸ If

transmission is occurring only in limited areas (as with the coronavirus in this report), screening should focus on travel from those areas.

Emergency physicians are often the first health care providers evaluating patients presenting with symptoms compatible with an emerging pathogen. When outbreaks are widely reported in the media, EDs are often faced with large numbers of concerned patients. In these situations, it is important to be aware of risk assessment criteria and recommended diagnostic testing strategies. The CDC is a good source of current information and has guidelines for reporting patients to state and local health departments. For example, recommendations for evaluation of suspected infection with this coronavirus were based on travel within 10 days to the Arabian Peninsula or neighboring countries or close contact with a symptomatic traveler.⁹ The CDC has similar recommendations for newly emerging viruses such as avian influenza A (H7N9), a virus that has been recently identified in humans in China.¹⁰ There are no specific guidelines for admission or treatment if MERS-CoV is suspected. During the 2003 SARS outbreak, individuals who were discharged home were told to limit interactions with others and not return to work, school, or public areas until 10 days after resolution of fever.¹¹ Updated recommendations are available at the CDC coronavirus Web site (<http://www.cdc.gov/coronavirus/index.html>).

As of May 31, 2013, 50 confirmed cases of MERS-CoV have been reported, and 27 individuals have died.⁹ Although the SARS coronavirus had a much larger global influence, application of the resulting infection control recommendations could limit the spread of this new coronavirus. Early screening for cases among patients and health care workers, limiting access to hospitals by visitors, and availability of adequate supplies and staffing were shown to be most beneficial in controlling the SARS coronavirus.¹² Simple infection control measures such as these can be applied in EDs to limit outbreaks and minimize transmission of more common infections such as influenza.

REFERENCES

1. European Centre for Disease Prevention and Control. *Epidemiological Update: Case of Severe Lower Respiratory Tract Disease Associated With a Novel Coronavirus—February 11, 2013*. Stockholm, Sweden: European Centre for Disease Prevention and Control; 2013. Available at: http://www.ecdc.europa.eu/en/press/news/lists/news/ecdc_dispform.aspx?list=32e43ee8%2de230%2d4424%2da783%2d85742124029a&id=841&rootfolder=%2fen%2fpress%2fnews%2flists%2fnews. Accessed May 12, 2013.
2. Zaki AM, van Boheemen S, Bestebroer TM, et al. Isolation of a novel coronavirus from a man with pneumonia in Saudi Arabia. *N Engl J Med*. 2012;367:1814-1820.
3. Siegel JD, Rhinehart E, Jackson M, et al. Healthcare Infection Control Practices Advisory Committee. 2007 Guideline for isolation precautions: preventing transmission of infectious agents in healthcare settings. Available at: <http://www.cdc.gov/hicpac/pdf/isolation/Isolation2007.pdf>. Accessed June 11, 2013.
4. Fowler RA, Guest CB, Lapinsky SE, et al. Transmission of severe acute respiratory syndrome during intubation and mechanical ventilation. *Am J Respir Crit Care Med*. 2004;169:1198-1202.
5. Gamage B, Moore D, Copes R, et al. Protecting health care workers from SARS and other respiratory pathogens: a review of the infection control literature. *Am J Infect Control*. 2005;33:114-121.
6. Centers for Disease Control and Prevention. Respiratory hygiene/cough etiquette in healthcare settings. Available at: <http://www.cdc.gov/flu/professionals/infectioncontrol/resphgiene.htm>. Accessed June 11, 2013.
7. World Health Organization. Clinical management of severe acute respiratory infections when novel coronavirus is suspected: what to do and what not to do. Available at: http://www.who.int/csr/disease/coronavirus_infections/InterimGuidance_ClinicalManagement_NovelCoronavirus_11Feb13u.pdf. Accessed June 11, 2013.
8. Rothman RE, Irvin CB, Moran GJ, et al. Respiratory hygiene in the emergency department. *Ann Emerg Med*. 2006;48:570-582.
9. Centers for Disease Control and Prevention. Coronavirus update, case definition, and guidance. Available at: <http://www.cdc.gov/coronavirus/ncv/case-def.html>. Accessed May 31, 2013.
10. Centers for Disease Control and Prevention. Watch: level 1, practice usual precautions avian flu (H7N9). Available at: <http://wwwnc.cdc.gov/travel/notices/watch/avian-flu-h7n9.htm>. Accessed June 11, 2013.
11. Centers for Disease Control and Prevention. Update: outbreak of severe acute respiratory syndrome worldwide 2003. *MMWR Morb Mortal Wkly Rep*. 2003;52:269-272.
12. Srinivasan A, McDonald LC, Jernigan D, et al. Foundations of the severe acute respiratory syndrome preparedness and response plan for healthcare facilities. *Infect Control Hosp Epidemiol*. 2004;25:1020-1025.

<http://dx.doi.org/10.1016/j.annemergmed.2013.06.003>