



Top Actions the United States Should Take to Prepare for MERS-CoV and Other Emerging Infections

Leading infectious disease, public health and emergency preparedness experts are calling for the United States to take additional steps to prepare for MERS-CoV and other emerging infections. Public health and healthcare systems cannot afford to become complacent in preparing for infectious disease threats. Trust for America's Health (TFAH), the Infectious Diseases Society of America (IDSA) and UPMC Center for Health Security are recommending system-wide preparedness for potential outbreaks.

MERS-CoV: A Novel Respiratory Virus

Middle East respiratory syndrome coronavirus (MERS-CoV) is a virus that causes serious respiratory illness, originating in Jordan and first reported in Saudi Arabia in 2012. The virus is new to humans and can cause severe acute illness and death. There is currently no vaccine or specific antiviral treatment available, so prevention and early care is vital to containment. To date, most outbreaks have arisen within or through travel to the Arabian Peninsula.¹ However, beginning in May 2015, a chain of transmission occurred in the Republic of Korea. Most of the infections in Korea could be linked to healthcare facilities that cared for ill patients.² The recent significant outbreak in South Korea has highlighted the need for America's public health and healthcare systems to strengthen routine infection control and prevention capacity.

In 2014, the United States had two imported cases of MERS.³ These cases were both healthcare workers who had worked in Saudi

Arabia and were quickly diagnosed and contained with no secondary transmission. United States health systems must be prepared for additional imported cases as Americans travel to the Arabian Peninsula.

Gaps in Preparedness for Infectious Disease Outbreaks

In the 2014 report, *Outbreaks: Protecting Americans from Infectious Diseases*, TFAH found that the U.S. Ebola cases exposed serious underlying gaps in the nation's ability to manage severe emerging infectious disease threats. The country tends to let enhanced infectious disease containment capabilities lapse as soon as a crisis is over. Infectious disease preparedness requires ongoing investments in public health investigative and disease response capabilities, hospital preparedness and infection control practices, and research and effective communications channels.

Like many emerging infections, much remains unknown about MERS and its transmission.⁴ While there is no need for panic among the general public, this uncertainty means the health system must maintain vigilance at all times. Infection control practices and all-hazards public

health preparedness must be routine year-round and “24/7”, not only in reaction to an outbreak. Foremost in a prepared system is a well-trained public health and healthcare workforce who are well-versed in infection control, contact tracing and monitoring, prevention measures,

case investigation, data/information management and communicating with the healthcare system and public. Overstretched and under-resourced healthcare and public health systems means these capabilities vary widely from jurisdiction to jurisdiction.

Recommendations to Prepare America’s Public Health and Healthcare Systems for MERS and Other Emerging Infections:

Some key actions the United States should take to prepare for additional domestic cases of MERS and other emerging infectious diseases include:

- **Strengthen Communication Strategies:**

In every crisis, public health faces the challenge of communicating with the healthcare system and the public while having of incomplete information. Ineffective communication can result in panic or complacency. Conflicting messages from different sources and unnecessary actions taken based on perception rather than science may contribute to public confusion and fear. In communicating with the public and healthcare workers, public health should take into account uncertainty of an evolving situation and partner with trusted community sources in outreach to at-risk communities. Public health should establish relationships with media ahead of crises and leverage social media to ensure accurate information reaches the public. Communications strategies must prepare the public—as well as policy makers—that policies may shift as understanding of the threat evolves. And U.S. Centers for Disease Control and Prevention (CDC) should build bidirectional communication pathways with state and local public health departments on a regular basis, not just during the outbreak. State and local public health agencies should enhance their relationships

and communication processes with healthcare providers to facilitate early reporting of suspected MERS cases to local public health. This enhanced reporting relationship should extend beyond just MERS but also include other diseases of concern including unusual cases of unknown cause.

- **Incorporate Health Alerts into Practice:** Improved systems are needed to ensure that health agencies, hospitals and healthcare providers receive and acknowledge health alerts from CDC and state and local public health agencies. Currently, there are sometimes gaps that mean alerts and updates are overlooked or are not reviewed or well-distributed in a timely manner. Healthcare professional societies and unions, hospital administrators, laboratories and others must ensure their workforce is informed and well-trained on appropriate procedures for newly emerging and ongoing threats. Public health and health systems should also consider the most effective way to reach their providers, including language-appropriate email, text, staff meetings and/or posted signs. Health facilities should adhere as much as possible to the most recent CDC guidance for

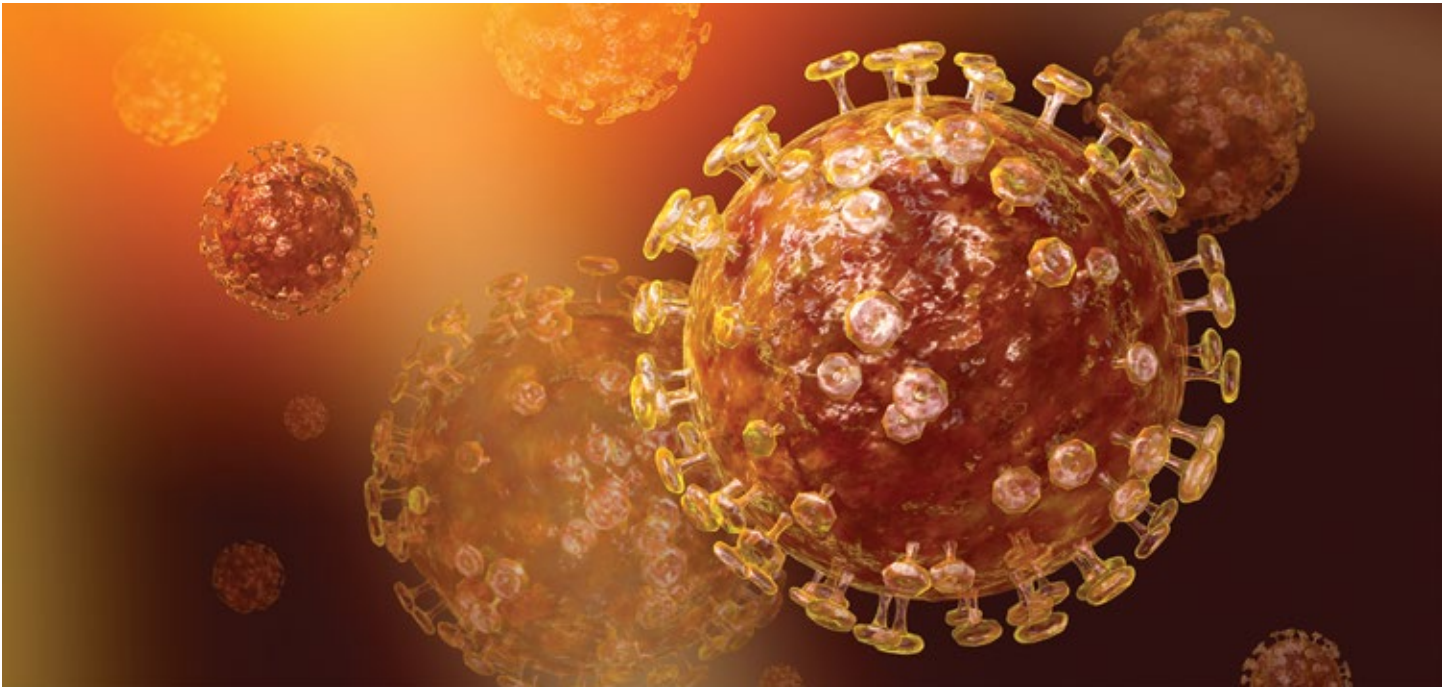
MERS, with the understanding that guidance might change as more is learned about the illness.⁵

- **Routinely Take Complete Travel Histories Upon Intake and Be Prepared to Promptly Isolate Potential Cases**

Needing Evaluation: Whether for MERS, Ebola, chikungunya, or other unfamiliar infections, complete recent travel history, including possible contact with infected individuals, is a key piece of diagnosing infectious disease. These questions should become a routine part of intake of patients in the outpatient and inpatient systems, not just during times of crisis. Healthcare facilities should ensure travel history queries are built into electronic health records and post signs in multiple languages that remind patients to inform providers of travel history and symptoms. When travel history and symptoms are compatible with a serious infectious disease, patients should be promptly isolated and appropriate infection control measures should be implemented.

- **Build Upon Ebola and All-Hazards Preparedness in the Healthcare**

System: Infection control needs to be a core capacity of the healthcare system year-round, before outbreaks



occur. Many experts believe U.S. hospitals would have challenges handling a major influx of patients, especially in an infectious outbreak.⁶ Before the U.S. Ebola cases, the Hospital Preparedness Program suffered cuts of more than 50 percent from Fiscal Year (FY) 2004-2014.⁷ These cuts have led to erosion in building key preparedness capabilities and training of frontline staff. The Ebola response supplemental funding helped backfill some ongoing gaps and address immediate concerns in a subset of healthcare facilities, but is still insufficient to build adequate and sustainable infection control capacity throughout the country. Continued and expanded support is needed to maintain base-level infection control as well as the tiered, regional response system that came out of the Ebola response. Hospitals should leverage Ebola preparedness efforts, such as isolation and transfer procedures to hospitals capable of treating infected patients, stockpiling and training in

personal protective equipment (PPE), laboratory testing capabilities and protection of healthcare workers and patients.⁸

- **Modernize Disease Surveillance:** A key component of infectious disease prevention and control is the ability to identify new outbreaks and track ongoing outbreaks. Currently, the United States lacks an integrated, modern approach to biosurveillance. Fragmented systems, out-of-date technologies and an understaffed and undertrained workforce limit the rapid detection and tracking of diseases. Policymakers should work to support real-time and interoperable disease tracking, ensuring resources that allow public health agencies and clinical healthcare systems to incorporate and use new information streams such as electronic health records and electronic laboratory reporting; advance new technologies like point-of-care diagnostics; perform web-based reporting to public health; and build enhanced baseline epidemiologic and

surveillance capabilities at the state and local public health level.

- **Advance Shared Framework for Quarantine Decisions:** Quarantine can be used to control outbreaks by restricting movements of individuals exposed to infectious diseases. Despite hundreds of years of experience and planning of quarantine scenarios, the federal government and state governments responded to the domestic Ebola threat with an inconsistent approach to quarantine and isolation, without a transparent, uniform scientific and medical rationale. Federal, state and local public health and policy leaders should come together and agree on a common decision-making framework ahead of the next outbreak to help states make quarantine decisions that (1) are based upon the best available scientific and medical evidence; (2) preserve social and economic continuity to the greatest extent possible; and (3) are in the best interest of public health.⁹

ENDNOTES

- 1 Middle East Respiratory Syndrome (MERS) – About MERS. In *Centers for Disease Control and Prevention*. <http://www.cdc.gov/coronavirus/mers/about/index.html> (accessed June 9, 2015).
- 2 Middle East respiratory syndrome coronavirus (MERS-CoV) – Republic of Korea. In *World Health Organization*. <http://www.who.int/csr/don/09-june-2015-mers-korea/en/> (accessed June 11, 2015).
- 3 CDC, *MERS in the U.S.* <http://www.cdc.gov/coronavirus/mers/us.html> (accessed June 9, 2015).
- 4 *Lancet Infect Dis* 2015; 15: 559–64 Published Online April 9, 2015 [http://dx.doi.org/10.1016/S1473-3099\(15\)70090-3](http://dx.doi.org/10.1016/S1473-3099(15)70090-3). (accessed June 9, 2015).
- 5 Interim Infection Prevention and Control Recommendations for Hospitalized Patients with Middle East Respiratory Syndrome Coronavirus (MERS-CoV). In *Centers for Disease Control and Prevention*. <http://www.cdc.gov/coronavirus/mers/infection-prevention-control.html> (accessed June 11, 2015).
- 6 *The Response to Ebola in the United States: Lessons Learned from a Multi-Discipline Perspective*. National Homeland Security Consortium, 2015. <http://www.astho.org/Preparedness/Response-to-Ebola-in-the-United-States-Lessons-Learned-Multi-Discipline-Perspective/NHSC-Issue-Paper/2015/> (accessed June 11, 2015).
- 7 *Outbreaks: Protecting Americans from Infectious Diseases*. Washington, DC: Trust for America's Health, 2014, p. 46. <http://healthyamericans.org/assets/files/TFAH-2014-OutbreaksRpt-FnlRv.pdf> (accessed June 11, 2015).
- 8 Ebola Information for Hospitals and Health-care Facilities. In *U.S. Department of Health & Human Services*. <http://www.phe.gov/Preparedness/responders/ebola/Pages/hospital.aspx> (accessed June 11, 2015).
- 9 Billington, J.K. (2015, June 7). Quarantine power in the United States [Web log post]. Retrieved from <https://jbills80.wordpress.com/2015/06/07/quarantine-power-in-the-united-states/>.



Trust for America's Health (TFAH) is a non-profit, non-partisan organization dedicated to saving lives by protecting the health of every community and working to make disease prevention a national priority.

The Infectious Diseases Society of America (IDSA) represents physicians, scientists and other health care professionals who specialize in infectious diseases. IDSA's purpose is to improve the health of individuals, communities, and society by promoting excellence in patient care, education, research, public health, and prevention relating to infectious diseases.

The **UPMC Center for Health Security** is an independent nonprofit organization that works to protect people's health from the consequences of epidemics and disasters and to ensure that communities are resilient to major challenges.

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