

# Sustaining Hospital Readiness for Ebola

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While efforts dedicated toward healthcare system preparedness for novel disease outbreaks varies across the USA, preparedness efforts are not new. Following the 2001 Anthrax attack, healthcare system preparedness has been driven by a “disease du jour”: 2001—Anthrax, 2003—Smallpox, 2004—SARS, 2005—H5H1, 2009—H1N1.

In 2014, spurred by the identification of a patient with Ebola virus disease (EVD) at a community hospital in Dallas during the height of the West Africa Ebola outbreak, hospitals across the USA and the rest of the world prepared their institutions to identify and treat and/or transfer EVD patients. These enhanced preparedness efforts required an increased level of coordination between different organizational elements (e.g., emergency department, infection control, laboratory, transportation, security, public affairs). However, now that the outbreak has dissipated, many hospitals are facing the very pragmatic question of “What now?”

Implicit in this question is that (1) maintaining the heightened level of preparedness requires substantial monetary and human resources from the institution, and (2) the chances of seeing a case of EVD in the USA is now quite low. As such, physicians, administrators, and staff are likely to see ongoing EVD-specific procedures, staffing models, and expenditures as a poor use of valuable institutional resources. While it may be tempting to return to routine procedures in existence before the West Africa Ebola outbreak, there is a new reality that needs to be considered.

The unprecedented extent of the West Africa Ebola outbreak, including imported cases across the world, was not due to an anomalous set of circumstances that are unlikely to recur. Rather, it was a manifestation of fundamental changes that have occurred in the world that have increased the likelihood that outbreaks emerging in previously isolated parts of the world can directly affect people half a world away. As the population of the world continues to increase exponentially, the ease of international travel has also increased. Furthermore, the world economy has become increasingly reliant on importation and

exportation of raw materials and finished goods. Complicating matters is the trend for medical tourism, either for cost-savings or advanced diagnostics and therapeutics. The result of our new reality is that the political borders that had previously contained high-consequence infectious diseases (HCIDs) are no longer reliable barriers to the spread of emerging infections.

Consequently, HCIDs such as Middle East respiratory syndrome (MERS) and Lassa fever, among others, have resulted in isolated cases or outbreaks far away from their geographic origin. Although much of the recent hospital preparedness efforts have been dedicated toward Ebola, what is necessitating continued hospital readiness is the potential for an outbreak to occur of a known disease, a novel or emerging HCID, and HCIDs that have not yet been discovered. Hospitals have put forth considerable resources toward developing and maintaining readiness plans for Ebola and, as the Ebola risk itself decreases, the next challenge is how best to transition the achieved readiness to generalized HCID response plans to assure hospitals have the ability to respond to the next “disease du jour.”

The traditional approach to HCID planning has generally been pathogen-specific, with healthcare institutions developing plans for each new emerging pathogen that poses an immediate threat. As new HCIDs continue to emerge and the multitude of different HCIDs continue to exist, the traditional, pathogen-specific approach has become impractical to maintain and, at times, counterproductive to operationalize. Having one plan for avian influenza, a different one for MERS, and yet another one for Ebola, etc. does not provide adaptability for future HCIDs and necessitates inefficient “re-inventing the wheel” for each new pathogen that emerges. In essence, historical preparedness efforts prepare for the last epidemic rather than creating a process that allows an institution to quickly respond to the next epidemic.

Transitioning from pathogen-specific readiness to more generalized HCID readiness may seem daunting, especially to infectious diseases specialists who have spent their careers understanding the differences in the transmission, pathogenicity, symptomatology, epidemiology, and treatment between different pathogens. However, most of the operational elements needed for a coordinated institutional response, such as physical security, public affairs, supply chain management, among others, have far less variability in their approach to different pathogens. Elements such as infection control, occupational health, and laboratory medicine, where more variability is expected between pathogens, can still find commonalities in their response to different organisms. For example, infection control may group pathogens based on mode(s) of transmission and personal protective equipment (PPE) needs. Although the institutional responses that would be needed for a suspected case of EVD may not be well-aligned for a suspected MERS case, the waste management issues, the laboratory processing protocols, and many other responses would be similar for Ebola as it would be for pathogens such as Marburg or smallpox. As such, an institution could transition to using a small number of similar response patterns such as Ebola-like responses, MERS-like responses, Anthrax-like responses, etc. This would allow for the development of plans that are more readily adaptable to whatever HCID might emerge next.

Other aspects of hospital readiness for Ebola can be more directly applied to readiness for HCIDs in general. Procedures put in place to activate the necessary operational elements for a suspected EVD patient can be generalized for any HCID, modifying as warranted by pathogen category specifics. Internal websites developed to inform providers of signs, symptoms, epidemiologic factors, and institutional protocols for EVD can become a familiar institutional resource for providers to turn to for information on other HCIDs as well. Communications that were created to update staff on Ebola-related developments can be used when an HCID becomes epidemiologically significant to deliver generalized information to the institution as well as targeted messages to groups of front-line providers who would be most likely to initially encounter the HCID. Signs and procedures developed to screen patients for EVD and prevent transmission can be transitioned to more general use of preventing the transmission of febrile respiratory infections as well as be adapted to screen for HCIDs as they emerge.

As the West Africa Ebola outbreak fades from immediate consciousness, it is important to remember the circumstances that allowed the outbreak to pose a threat to the rest of world have not changed and will persist. Further outbreaks of Ebola will continue to occur, and healthcare systems need to maintain their readiness to be able to manage EVD cases. Furthermore, other HCIDs will continue to emerge and pose similar challenges to healthcare institutions. Rather than discarding the tremendous amount of work that accompanied Ebola preparedness efforts, healthcare organizations have the opportunity to transform these efforts into sustainable hospital readiness for all HCIDs.

## Compliance with Ethical Standards

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### **Conflict of Interest**

Dr. Pritish Tosh declares that he has no conflict of interest.

Dr. Byron Callies declares that he has no conflict of interest.

### **Human and Animal Rights and Informed Consent**

This article does not contain any studies with human or animal subjects performed by any of the authors.