



The Response to Ebola in the United States: Lessons Learned from a Multi-Discipline Perspective

An Issue Paper by the National Homeland Security Consortium

Intent

The intent of the issue paper is not to document the Ebola response in its entirety, but rather to reflect the experiences and observations of the public safety, health and security professionals who comprise the National Homeland Security Consortium (NHSC).

Introduction

In the spring of 2014, an outbreak of the Ebola virus infection occurred in West Africa. Ebola is a rare and infectious disease spread through direct contact with blood or bodily fluids, and it is often fatal. The first reports of Ebola in 2014 began in Guinea, and the outbreak soon spread to Sierra Leone, Liberia, Nigeria, Senegal, and Mali. By late 2014, more than 10,000 people had contracted Ebola, and more than half of these individuals died.¹

Ebola eventually made its way to the United States, and on September 30, 2014, the first case of Ebola imported into the U.S. was diagnosed. A man who had travelled from Liberia to Dallas, Texas began developing symptoms and sought help at Texas Presbyterian Hospital of Dallas, where he was tested and isolated. He died on October 8. Two healthcare workers who had cared for the patient at Texas Presbyterian subsequently tested positive for Ebola. Both recovered and were discharged in late October. The New York City Department of Health and Mental Hygiene diagnosed a fourth case on October 23 in a medical aid worker who had returned to New York from Guinea. He recovered and was discharged on November 11.² Throughout the fall other individuals infected with the Ebola virus were cared for at the Nebraska Medical Center, Emory University Hospital, and the clinical center of the National Institute of Health.

While the impact of Ebola on the U.S. was far from the devastation seen in Western Africa, these incidents and our response to them raised questions about the nation's

¹ Tiaji Salaam-Blyther, *U.S. and International Health Responses to the Ebola Outbreak in West Africa*, Congressional Research Service: 29 October 2014, p. 1.

² The material presented in this paragraph is drawn from the United States Centers for Disease Control and Prevention, "Cases of Ebola Diagnosed in the United States," <http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/united-states-imported-case.html>

preparedness for infectious disease outbreaks. In the spring of 2015, the National Homeland Security Consortium (NHSC) met and discussed the lessons learned from the response to Ebola in the U.S. Over two days, representatives of organizations representing a variety of stakeholders in homeland security—from public health to emergency management to public works—shared their observations concerning what worked well and what didn't. What follows is a summary of key lessons learned.

Information Sharing Worked Well, but There Are Opportunities for Improvement

Homeland security incidents have long demonstrated the importance of information sharing. The response to Ebola in the U.S. was no different and highlighted both information sharing successes as well as opportunities for improvement. For example, information sharing between public health, state emergency medical service officials, and emergency managers worked well, and state emergency managers were included in briefings with governors, public health meetings and calls. Joint planning and exercises were conducted in many states. Further, there were open lines of communication and efforts to include a wide range of stakeholders. The Association of State and Territorial Health Officials (ASTHO) served as an important source of information—which the National Emergency Management Association (NEMA) shared with state emergency management agencies and NHSC shared with its members.

However, there were other elements of information sharing that could be improved. At times, there was too much information coming in from too many sources. This led to information overload, which made it difficult to find the most important and helpful pieces of information. Moreover, the information often wasn't timely enough. For example, states received late notice from federal agencies about high-risk individuals coming in from abroad.

NHSC members believe that outreach to a variety of audiences could be done better. In our current media environment—with so many outlets and social media—it is crucial that authoritative information be shared to counter misinformation. People will get information from somewhere, whether it is Twitter, Facebook, or the local newspaper, and we need to do what we can to have our voices heard. Selecting a face for the media and developing a communications plan to ensure that the media is receiving timely, validated information can help address these problems. It is also important to communicate frequently and manage expectations. If that's not done, the media will drive the event.

NHSC members pointed to different activities that were adopted throughout the country to facilitate information sharing. For example, the National Association of County and City Health Officials (NACCHO) collected information on high-risk counties, quarantine stations, and local health departments that had set up hotlines, among other things, and put this information into a GIS application to make it available to its members. The National Association of State EMS Officials (NASEMSO) set up an Ebola focused section on its website that was continuously updated. NASEMSO also disseminated this information through conference calls and other updates. NEMA and the International Association of Emergency Managers (IAEM) collaborated on a webinar centering on

lessons learned from the Dallas experience, which was very popular. The webinar had 1,000 spaces available and 1,300 people signed up immediately. National associations were very effective in sharing information between their memberships which provided access to data that may not have otherwise been available. They also served as a conduit between the federal government and state and local stakeholders, which allowed information to be disseminated nationally and in a timely manner.

Personal Protective Equipment (PPE) Posed Problems

Because the Ebola virus is spread through direct contact properly used personal protective equipment (PPE) is necessary to reduce the risk of infection. The response to Ebola in the U.S. raised a number of concerns about PPE. NHSC members pointed to the shortage of PPE as a serious problem. Several fire departments experienced delays in receiving the needed PPE for Ebola response—in some cases for as long as 6 to 8 weeks. In Arlington, Texas, police and firefighters were able to get PPE, but some partner agencies were not. For incidents such as these, it is important that PPE is available in a reasonable amount of time in reasonable quantities. When the national inventory is low, the government needs to consider a process for PPE prioritization.

Better guidance on PPE use is also needed. Information provided on PPE was often aimed at healthcare facilities and did not initially consider the broader potential audience, such as the EMS and first responder community. In some cases, it was not clear to first responders whether they needed PPE, and communities sought to purchase them unnecessarily. Further, PPE training also needs to be considered. Online training is not appropriate for learning to use PPE. Rather, it requires in person, hands-on training with an experienced instructor.

Planning Was Invaluable

Planning is a key element of preparedness, and proper planning was seen as invaluable to the response to Ebola. As a general rule, response plans need to be flexible and adaptable to manage the particular needs and challenges of each event. The unique challenges posed by the highly transmissible nature of Ebola required designation of specific hospitals in each state that had the infrastructure, personnel, access to training and willingness to assume the responsibility for treating potential or confirmed Ebola patients (handled identically as a precaution). Wisconsin, for example, approached specific hospitals with a request to be Ebola treatment facilities, and three hospitals agreed to accept this critical role. Wisconsin then put out a call to all hospitals to self-identify whether they could serve as Ebola assessment facilities, with a particular request for each major health system to identify one hospital within their system. Twenty hospitals ended up self-identifying as assessment hospitals. Wisconsin similarly designated EMS providers in the state that were prepared to safely and securely transport an Ebola patient.

In dealing with Ebola and infectious diseases specifically, it is important to pre-identify temporary living quarters for exposed patients and families being monitored, as well as their pets. It is also important to have contracts in place in advance for hazardous waste transportation and disposal—or at a minimum to pre-identify qualified and willing

vendors. Further, healthcare facilities need to broaden their infectious disease emergency plans and exercises to account for threats with different routes of transmission and means of prevention and intervention

NHSC members highlighted the importance of sharing plans and noted the efforts made by states to do so. They also pointed out the importance of including a wide range of stakeholders in planning discussions, such as developing, evaluating, updating, and implementing plans at all levels of government. For example, public works should be included in planning efforts given their responsibility for water treatment and distribution systems, and solid waste collection and disposal.

Planning must also allow for innovation to address specific or unique incidents. For example, several states such as Wisconsin and Florida leveraged the National Guard as a medical resource to relieve hospital personnel who had been working around-the-clock. Most of the National Guard personnel utilized were members of the community and already practicing in area hospitals and had familiarity with protocols but were not always familiar with the specific requirements of Ebola. To help address this, the Wisconsin National Guard developed Joint Healthcare Assistance Teams trained in coordination with the state Department of Health Services in donning, doffing and performing procedures in the recommended Ebola PPE. These teams stood ready to assist hospitals that needed help with an Ebola patient or with other patients hospitalized at the same time. In Arlington, Texas officials made rapid adjustments to changing conditions. When 911 call takers had a positive initial patient screen, they were transferred directly to the local emergency operations to speak with the medical director. This streamlined the process and enabled responders in the field to have more accurate and timely information. It also allowed for direct case management of each incident by medical professionals who were up-to-date on recommended actions.

More Discussion of Quarantines is Necessary

The potential use of quarantines was seen as an issue that raised a number of practical and ethical concerns that need further discussion. While restricting the movement of individuals through quarantines can be an effective public health intervention, it is not easy or popular. Moreover, widely different authorities utilized in different jurisdictions, as well as implementation challenges complicate the use of quarantines. For example, jurisdictions need to consider what will be done with patients who refuse to be quarantined or wish to appeal a mandatory quarantine. Consideration must also extend beyond the initial patient to include first responders, if necessary. A quarantine decision must also include where individuals will be quarantined and how family members of the same household will be managed

Training Needs to Improve

There was an initial assumption that hospitals, healthcare providers and government were more prepared than they actually were to deal with the Ebola event. In reality, there was insufficient training on how to respond to the threat of Ebola. Training is important if we hope to see effective responses to infectious diseases. In Tennessee, for example, uniform statewide training was a challenge, and additional specialized

training was needed. The Association of Public Safety Communications Officials (APCO) representing 911 centers offered training on Ebola symptoms and protocols to their 22,000 members, but only 1,000 were able to participate. However, they were able to utilize interim guides for Public Safety Answering Points (PSAPs) provided by the CDC.

More training is needed to familiarize state and local government personnel with the Incident Command System (ICS). Each response aligns us with new partners with whom we may not have worked previously. It became obvious during the response to Ebola that not all agencies or disciplines were familiar with the ICS.

Recommendations for Future Infectious Disease Response

1. The U.S. healthcare system's emergency preparedness structure for highly infectious diseases should mirror our day-to-day systems.
2. There needs to be a better determination of our national hospital capacity to handle infectious disease patients. Also, further consideration is needed of the ethical decisions related to caring for mass numbers when existing capacity isn't sufficient.
3. State and local governments should review their laws and authorities for quarantine and make any necessary changes to strengthen enforcement.
4. A national, systematic and comprehensive approach is needed in applying lessons learned from previous responses.
5. An adequate, steady funding stream is necessary for public health and healthcare preparedness and response rather than crisis funding by event.
6. Clear leadership designation and organization, command/incident management structures, and a collaborative spirit and commitment are necessary for optimal response with a government-wide approach to health threats at all levels.

About the National Homeland Security Consortium

The National Homeland Security Consortium is a forum for public and private sector disciplines to coalesce efforts and perspectives about how best to protect America in the twenty-first Century. The Consortium consists of 20 national organizations that represent local, state and private professionals. The Consortium represents the array of professions that deliver the daily services that are vital to safety and security of the United States. The Consortium represents the first and secondary responders as well as those who will provide the sustained effort necessary to respond to any major emergency, including leadership and direction by elected and appointed officials.

NHSC members include:

- Adjutants General Association of the United States
- American Public Works Association
- Association of Public Safety Communications Officials
- Association of State & Territorial Health Officials

- Governors' Homeland Security Advisors Council
- International Association of Emergency Managers
- International Association of Fire Chiefs
- International City/County Management Association
- Major City Police Chiefs Association
- National Association of Counties
- National Association of County & City Health Officials
- National Association of State Chief Information Officers
- National Association of State Emergency Medical Services Officials
- National Conference of State Legislatures
- National Emergency Management Association
- National Governors' Association
- National League of Cities
- National Sheriffs' Association
- Naval Postgraduate School Center for Homeland Defense & Security
- U.S. Chamber of Commerce