

House Energy and Commerce Committee

Subcommittee on Health

Examining Medical Product Development in the Wake of the Ebola Epidemic

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Centers for Disease Control and Prevention

Good afternoon Chairman Pitts, Ranking Member Pallone, and members of the Subcommittee. Thank you for the opportunity to testify before you today and for your ongoing support for the Centers for Disease Control and Prevention's (CDC) work protecting Americans. I am Rear Admiral Stephen C. Redd, Senior Advisor on CDC's Ebola response. I appreciate the opportunity to be here today to discuss the epidemic of Ebola, as well as the work the CDC is doing to manage this epidemic and its consequences, both here in the United States and overseas. My testimony will provide you with an update on the epidemic, the important steps we are taking to protect Americans by actions here at home and by eliminating threats overseas, and describe the unfinished work that needs to be addressed through the Emergency Funding Request for Ebola.

Status of the Epidemic

We have diagnosed a total of four Ebola cases in the United States, two of which were in people returning from West Africa and two health care workers infected here. In addition to these four cases, our health care system has successfully treated five American patients with Ebola who were safely medically evacuated from West Africa. Unfortunately, earlier this week, a volunteer physician was

medically evacuated from Sierra Leone and died in the United States. Since August, we have evaluated and ruled out Ebola in scores of other cases in the United States.

The 21-day monitoring period has passed for all of the community contacts and health care workers who had been identified by public health workers as having had potential contact with the Ebola patients in Texas and Ohio. We continue to monitor numerous low- but not zero-risk hospital staff who treated Dr. Craig Spencer in New York City.

Although there are some promising signs in parts of Liberia, the epidemic continues to rage there and elsewhere in West Africa. Some of this progress could be attributable to the extensive work the United States Government and our partners have done to increase treatment and isolation, and safe burials. This week, with the assistance of the Commissioned Corps of the United States Public Health Service, we have opened a facility intended to treat any health care workers who become infected with Ebola. We hope this will facilitate additional health care workers volunteering to care for patients. We were encouraged that proven public health techniques allowed for the containment of the disease in Nigeria and Senegal. However, we do see a continued risk to other African countries, as evidenced by the introduction of Ebola into Mali. While there has been some progress in some parts of Liberia, there is a long way to go before this epidemic is contained and we are safe from the risk of it spreading.

Protecting Americans

From the time the situation in West Africa escalated from an outbreak to an epidemic, we have recognized that we will only have zero risk in the United States when we eliminate the threat in West Africa. We have instituted layers of protections for Americans, starting with rigorous screening of passengers leaving the affected countries. Here in the United States, we also have anticipated that a

traveler could arrive with the disease, and we prepared for this possibility by working closely with our state and local partners and with clinicians and health care facilities so that any imported case could be quickly contained. We have learned important lessons from the imported case in Dallas, which underscored the need to improve tracking of those exposed; adapt and strengthen our guidance; ensure rigorous adherence to protocols; improve readiness of American hospitals; and work closely across Federal, state, and local levels of government.

The first imported case of Ebola in the United States, diagnosed on September 30 in Dallas in a traveler from Liberia, required CDC and the Nation's public health system to rapidly respond with control measures. As far as we have seen in Africa and the United States, Ebola only spreads from people who are ill or who have died, or from their body fluids. The two primary means by which Ebola spreads are unsafe care (prior to and after health care facility admission) and unsafe burials. Cultural norms that contribute to the spread of the disease in Africa – such as burial customs – are not a factor in the United States. Ebola can be stopped with appropriate triage, rapid diagnosis, and meticulous infection-control practices in American hospitals. CDC applies the best science and lessons we are learning to inform our guidance and actions.

We have been constantly monitoring and improving our response in the United States, and will continue to do so. This begins with a layered approach to increasing safety. Before the traveler leaves for the United States, these precautions start with intensive airport exit screening in the affected nations, including temperature scanning for outbound passengers. CDC staff worked to implement this exit screening through on-site training and ongoing direction in the affected countries.

CDC and U.S. Customs and Border Protection (CBP) within the Department of Homeland Security (DHS) also have implemented a rigorous program of entry screening for travelers at risk of

carrying Ebola arriving in the United States. On October 11, entry screening began for passengers arriving at JFK airport and at four additional airports on October 16. The four additional U.S. airports are Newark, Washington-Dulles, Chicago-O'Hare, and Atlanta-Hartsfield International. On October 21, 2014, DHS announced that all travelers coming to the United States by air from Ebola affected countries will be required to enter the United States at one of the five airports where enhanced screening measures are implemented. Also, CDC and DHS announced that, effective Monday, November 17, entry screening would begin for travelers from Mali due to the evolving nature of outbreaks there. Screening includes an assessment for risk exposure and early signs of infection, and triage of passengers with clinical symptoms. With this assessment, appropriate public health actions can be determined and implemented, including movement restrictions when warranted.

On October 27, CDC updated its interim guidance for monitoring people potentially exposed to Ebola and for evaluating their intended travel, including the application of movement restrictions when indicated, and, consistent with this guidance, partnered with all 50 states to begin a program of active monitoring for 21 days for any individual arriving from West Africa. This monitoring program begins at the airport – where CBP and CDC obtain detailed contact information and provide passengers with detailed information on monitoring along with thermometers, health information, a log for temperature and symptoms, contact information for state health departments, and a wallet card to refer to in case of illness. Travelers with fever (all of whom have tested negative for Ebola) have used this information to contact the 24/7 hotlines every state has established and have been transported safely, and cared for safely, while an Ebola diagnosis was being ruled out. State and local authorities are provided contact information and a detailed risk assessment for passengers, allowing them to take steps to appropriately actively monitor those with potential Ebola risks.

CDC is committed to providing immediate support to the state and local health and public health officials. Within hours of confirming the cases of Ebola, CDC had a team of people on the ground in Dallas; in New York City, CDC had a team already on the ground assessing the hospital, and sent additional staff even before the patient's diagnosis was confirmed, in order to assist the capable teams from state health departments, local authorities, and hospital staff. We have worked side-by-side with state and local officials to do all we can to prevent transmission to others. CDC supported the state and local officials to monitor people who may have been exposed to Ebola in Texas, New York City, and Ohio. These individuals were tracked for 21 days for any signs of symptoms, and were quickly isolated if symptoms developed. And, as of November 7, all contacts in both Texas and Ohio are out of the 21 day period of monitoring for onset of illness.

We were deeply concerned to have learned of transmission of the Ebola virus from the first, or "index" patient in the United States, to two health care workers in Dallas. While we may never know exactly how these transmissions occurred, they demonstrated the need to strengthen the procedures for infection-control protocols which allowed for exposure to the virus. The care of Ebola can be done safely, but it requires meticulous and scrupulous attention to infection control, and even a single inadvertent slip can result in contamination. Based on experience in Dallas as well as at NIH and Emory University, we updated our guidance for the use of personal protective equipment in the assessment and treatment of Ebola in the United States. We recommended that facilities keep the number of workers who care for anyone with suspected Ebola to an absolute minimum. We recommended that the procedures that are undertaken to support the care of an infected individual be limited solely to essential procedures. We are recommending there be a full time individual who is responsible only for the oversight, supervision, and monitoring of effective infection control while an Ebola patient is cared for.

We will continue to evaluate and improve infection control and preparedness as we learn more in the United States and elsewhere.

We have taken additional steps to increase the preparedness of hospitals. CDC is leading teams of public health infection control experts to assess the readiness of hospitals. This endeavor prioritized geographic locations around the hospitals where increased screening was occurring at airports and continues in a strategic manner. By November 17, these teams had visited 41 hospitals in 12 states and the District of Columbia. Every hospital should have the ability to recognize the signs of a possible Ebola case and isolate that individual. Further, the Administration's emergency funding request includes resources for the Department of Health and Human Services to strengthen infection control to prevent spread of Ebola and other infectious diseases in the United States. CDC is also increasing training for health care providers, including web based seminars on donning and doffing of PPE, and in-person events, such as one held at the Jacob Javits Center in New York, which was broadcast live and attended in-person by more than five thousand people.

Additionally, CDC continues to build capacity in our states through the Laboratory Response Network (LRN). In addition to CDC's own world class laboratories, 31 LRN labs now have capacity to test for Ebola, increasing access to timely diagnosis – and surge capacity in case it is needed. CDC is also extensively consulted to support evaluation and, when indicated, test people who may have Ebola. With heightened alert, we are receiving hundreds of inquiries for help ruling out Ebola in travelers – a sign of how seriously airlines, border agents, public health departments, and health care system workers are taking this situation.

On November 5, the Administration proposed an emergency funding request, including \$1.83 billion for CDC, to enhance our efforts to address the situation. This request includes \$621 million designed to fortify domestic public health systems. This request allows us to fully implement the urgent strategies outlined above, and includes support for the following activities:

- Improve Ebola readiness within State and local public health departments and laboratories.
- Support state health departments to improve and accelerate infection-control implementation throughout U.S. hospitals.
- Procure personal protective equipment (PPE) for the Strategic National Stockpile.
- Increase support for monitoring of travelers at U.S. airports and in states and communities.

Eliminating Ebola in West Africa

CDC's top priority is to protect Americans from threats. In the case of Ebola, this means not only working here at home, but eliminating the risk to Americans by stopping this epidemic at its source in Africa.

The current epidemic in Guinea, Liberia, and Sierra Leone is the first time an outbreak has been recognized in West Africa, the first-ever Ebola epidemic, and the biggest and most complex Ebola challenge the world has ever faced. We have seen cases imported into Nigeria, Senegal, and Mali from the initially-affected areas and we have also seen in Nigeria and Senegal that proven practices such as contact tracing, monitoring, and isolation and care can prevent a small number of cases from growing into a larger outbreak. We are working intensively in Mali to apply these control measures.

The earliest recorded cases in the current epidemic were reported in March of this year in West Africa. Following an initial response that seemed to slow the early outbreak for a time, cases flared again due to weak health care and public health systems. As of earlier this week, the epidemic has reached 14,484 reported cases, including 5,524 documented deaths, though we believe these numbers are substantially below actual disease rates.

The health systems in the affected countries in West Africa were weak prior to the Ebola outbreak, and do not reach into rural areas effectively. Health care workers are often too few in number and not reliably present at facilities, and those facilities have limited capacity. Poor infection control in routine health care throughout West Africa, along with traditions such as public funerals and preparing bodies of the deceased for burial, make efforts to contain the illness more difficult. Furthermore, the porous land borders among these three countries and their neighbors in West Africa as well as remoteness of many villages have greatly complicated control efforts. The epidemic has further weakened these fragile health care systems – many of which are now essentially shuttered – and as a result local populations have lost access to treatment for other major health threats, such as malaria, diarrheal disease, and assistance with birth and delivery. The secondary effects of this outbreak also transcend the medical realm, as the economies of the affected countries have taken major blows that could impact their growth and development for years to come and greatly complicated the epidemic response. To stop an Ebola outbreak, we find active cases, respond appropriately, and prevent future cases. The use of diagnostics is important to identify new cases. Once active cases have been identified, we must support safe and effective patient care in treatment centers, prevent further transmission through proper infection control practices, and protect healthcare workers. Epidemiologists must identify contacts of infected patients and follow up with them every day for 21 days, initiating testing and isolation if symptoms emerge. And, we must intensify our use of health communication to disseminate messages about effective prevention and risk reduction. These messages include recommendations to report suspected cases, to

avoid close contact with sick people or the deceased, and to promote safe burial practices. In Africa, another message is to avoid unsafe handling of bush meat and contact with bats, since “spillover events,” or transmission from animals to people, in Africa have been documented for other viruses similar to Ebola through these sources.

We are working to strengthen the global response, which requires close collaboration with the World Health Organization (WHO) and additional assistance from our international partners. At CDC, we activated our Emergency Operations Center to respond to the initial outbreak, and are surging our response. As of last week, CDC has over 177 staff in West Africa, and over 1,750 staff in total have provided logistics, staffing, communication, analytics, management, and other support functions. CDC will continue to work with our partners across the United States Government and elsewhere to focus on key strategies of response: effective incident management, isolation and treatment facilities, safe burial practices, infection control throughout the health care system, and communications.

The public health response to Ebola rests on the same proven public health approaches that we employ for other outbreaks, and many of our experts are working in the affected countries to rapidly apply these approaches and build local capacity. These include strong surveillance and epidemiology, using real-time data to improve rapid response; case-finding and tracing of the contacts of Ebola patients to identify those with symptoms and monitor their status; and strong laboratory networks that allow rapid diagnosis.

The Administration’s proposed emergency funding request includes \$603 million for CDC efforts to control the epidemic in the hardest hit countries in Africa by funding activities including: infection control, contact tracing and laboratory surveillance and training; emergency operation centers and

preparedness; and education and outreach, and to conduct clinical trials in affected countries to assess safety and efficacy of vaccine candidates.

Reinforcing Basic Global Health Protections

There is an urgent need to reinforce basic public health systems in countries, such as those in West Africa, where disease threats can quickly arise and ultimately threaten the health of Americans. The Emergency Funding Request will allow us to emergently address unanticipated, urgent threats to health and global stability. We believe that if basic lab networks that can rapidly diagnose Ebola and other threats, emergency operations centers that can swing into action at a moment's notice, networks of trained disease detectives who can find an emerging threat and stop it quickly, and surveillance systems had been in place in West Africa before the current outbreak, the epidemic could have been prevented. Building these capabilities at the places of highest risk is key to preventing this type of event elsewhere and to ensuring that countries are prepared to deal with the consequences of their own outbreaks before they are exported to other countries. We must do more, and do it quickly, to strengthen global health security around the world, because we are all connected. Diseases can be unpredictable – such as H1N1 coming from Mexico, MERS emerging from the Middle East, or Ebola in West Africa, where it had never been recognized before – which is why we have to be prepared globally for anything nature can create that could threaten our global health security.

The Administration's proposed emergency funding request includes \$606 million for CDC to strengthen global health security, reducing risks to Americans by addressing unanticipated threats and enabling the world to detect them early, respond swiftly before they become epidemics, and prevent outbreaks wherever possible. These efforts will provide temporary assistance to establish global health security capacity in vulnerable countries to prevent, detect, and rapidly respond to outbreaks before they become

epidemics by standing up emergency operations centers; providing equipment and training needed to test patients and report data in real time; providing safe and secure laboratory capacity; and developing a trained workforce to track and end outbreaks before they become epidemics. These activities are necessary to combat the spread of Ebola and reduce the potential for future outbreaks of Ebola and other infectious diseases that could follow a similarly devastating, costly, and destabilizing trajectory.

Conclusion

Stopping Ebola will take time and meticulous work. There are no short cuts. It's like fighting a forest fire: leave behind one burning ember, one case undetected, and the epidemic could re-ignite. For example, in response to the case in Nigeria, 10 CDC staff and 40 top CDC-trained Nigerian epidemiologists rapidly activated, identified contacts, and worked with more than 1,000 Nigerian health workers to track 899 contacts for 21 days, making 19,000 home visits. Even with these resources, one case was missed, which resulted in a new cluster of cases in Port Harcourt, Nigeria. The health care workers persevered, and Nigeria is now Ebola-free – from that importation event. Public health strategies can stop transmission of Ebola and halt the progression of an outbreak.

With a focused effort, and increased vigilance at home, we can stop this epidemic, protect Americans, and leave behind a strong system in West Africa and elsewhere to prevent Ebola and other health threats in the future.

Thank you again for the opportunity to appear before you today. I appreciate your attention to this epidemic and I look forward to answering your questions.