

House Energy and Commerce Committee  
Subcommittee on Oversight and Investigations

Public Health Response to Ebola

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Good afternoon Chairman Murphy, Ranking Member DeGette, 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 in protecting Americans. I am Dr. Tom Frieden, Director of the CDC. 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 the consequences of this epidemic – both here in the United States and overseas – in the wake of the first diagnosed case here in the United States two weeks ago, which ultimately and tragically has become the first death from Ebola in the United States.

Additionally, I will address the work CDC and public health officials in Texas are undertaking in response to the transmission of Ebola to two health care workers here in the United States, which occurred this week.

From the time the situation in West Africa escalated from an outbreak to an epidemic, we have anticipated that a traveler could arrive in the United States with the disease. We have been preparing 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. This occurrence underscores the need to carefully follow the protocols that have been developed, to work closely across levels of government,

and to continue our urgent effort to address the epidemic in West Africa, which remains the biggest risk to the United States.

As we learn from the recent importation case in Dallas and subsequent transmissions, and continue the public health response there, we remain confident that Ebola is not a significant public health threat to the United States. It is not transmitted easily, and it does not spread from people who are not ill, and cultural norms that contribute to the spread of the disease in Africa – such as burial customs and inadequate public-health measures – are not a factor in the United States. We know Ebola can be stopped with rapid diagnosis, appropriate triage, and meticulous infection-control practices in American hospitals. And the United States is leading the international effort to stop it at the source in Africa. CDC is committing significant resources both on the ground in West Africa and through our Emergency Operations Center here at home.

We have been constantly monitoring our response in the United States, and will continue to do so. CDC and U.S. Customs and Border Protection (CBP) in the Department of Homeland Security (DHS) have implemented new layers of entry screening at five U.S. airports that receive over 94 percent of travelers from the Ebola-affected nations of Guinea, Liberia, and Sierra Leone. On October 11, 2014, we began screening New York's JFK International Airport, since in the 12 months ending July 2014, JFK received nearly half of all travelers from those three West African nations. The enhanced entry screening has expanded this week at Washington-Dulles, Newark, Chicago-O'Hare, and Atlanta international airports.

This is a whole-of-Government response, with agencies across the United States Government committing human and financial resources. Across HHS, CDC is actively partnering with the Office of Global Affairs, the Office of the Assistant Secretary for Preparedness and Response, the National Institutes of Health, and the Food and Drug Administration to coordinate and respond to this epidemic.

Also, CDC has embedded technical staff as the leads for the health, medical, and public health aspects of the response in the USAID-led DART team in West Africa. Additionally, staff, logistical support, and resources from the Department of Defense (DoD) are already being deployed to rapidly scale up our efforts to include constructing Ebola Treatment Units (ETUs) and training health care workers. We are working closely with our international partners to scale up the response to the levels needed to stop this epidemic.

Ebola is a severe, often fatal, viral hemorrhagic fever. The first Ebola virus was detected in 1976 in what is now the Democratic Republic of Congo. Since then, outbreaks have appeared sporadically. 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 and Senegal from the initially-affected areas and we have also seen in Nigeria and Senegal that proven practices such as contact tracing, monitoring, and isolation practices can contribute to managing Ebola and preventing a small number of cases from growing into a larger outbreak.

Ebola has symptoms similar to many other illnesses, including fever, chills, weakness and body aches. Gastrointestinal symptoms such as vomiting and diarrhea are common and profound, with fluid losses on average of 5-7 liters in 24 hours over a five day period. These fluid losses can result in life-threatening electrolyte losses. In approximately half of cases there is hemorrhage -- serious internal and external bleeding. There are two things that are very important to understand about how Ebola spreads. First, the current evidence suggests human-to-human transmission of Ebola only happens from people who are symptomatic-- not from people who have been exposed to, but are not ill with the disease. Second, everything we have seen in our decades of experience with Ebola indicates that Ebola is not spread by casual contact; Ebola is spread through direct contact with bodily fluids of someone who is sick with, or has died from Ebola, or through exposure to objects such as needles that have been

contaminated. While the illness has an average 8-10 day incubation period (though it may be as short as two days and as long as 21 days), we recommend monitoring for fever and signs of symptoms for the full 21 days. Again, we do not believe people are contagious during that incubation period, when they have no symptoms. Evidence does not suggest Ebola is spread through the air.

The earliest recorded cases in the current epidemic were reported in March of this year. Following an initial response that seemed to slow the early outbreak for a time, cases flared again due to weak systems of health care and public health and because of challenges health workers faced in dealing with communities where critical disease-control measures were in conflict with regular practices. As of last week, the epidemic has reached 8,997 reported cases, including 4,493 documented deaths, though we believe these numbers may be substantially under-reported. The effort to control the epidemic in some places is complicated by fear of the disease and distrust of outsiders. Security is tenuous and unstable, especially in remote isolated rural areas. There have been instances where public health teams could not do their jobs because of security concerns, although community outreach has resulted in acceptance of services in specific areas.

Many of 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 in these three countries, 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 countries and remoteness of many villages have greatly complicated control efforts. The epidemic has further weakened these fragile healthcare systems – even to the point of collapse – and as a result local populations have lost access to treatment for other major health issues, such as malaria, diarrheal disease, or assistance with child 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. The region also faces greater international isolation, and the potential for political instability. These impacts are intensifying, and not only signal a growing humanitarian crisis, but also have direct impacts on our ability to respond to the Ebola epidemic itself.

Fortunately, we know what we must do. In order to stop an Ebola outbreak, we must find active cases, respond appropriately, and prevent future cases. The use of real-time diagnostics is extremely important to identify new cases. We must support the strengthening of health systems and assist in training healthcare providers. Once active cases have been identified, we must support quality 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 tools 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 bush meat and contact with bats, since “spillover events,” or transmission from animals to people, in Africa have been documented through these sources.

Many challenges remain. While we do know how to stop Ebola through meticulous case finding, isolation, and contact tracing, there is currently no cure or vaccine shown to be safe or effective for Ebola. 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 139 staff in West Africa, and over 1,000 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 – CDC is supporting countries to establish national and sub-national Emergency Operations Centers (EOCs) by providing technical assistance and standard operating procedures and embedding staff with expertise in emergency operations. All three West African countries at the center of the epidemic have now named and empowered an Incident Manager to lead efforts.
- Isolation and treatment facilities – It is imperative that we ramp up our efforts to provide adequate space to treat the number of people afflicted with this virus.
- Safe burial practices – Addressing local norms on burial practices is one of the keys to stopping this epidemic. CDC is providing technical assistance for safe burials.
- Infection control throughout the health care system– Good infection control will greatly reduce the spread of Ebola and help control future outbreaks. CDC has a lead role in infection control training for health care workers and safe patient triage throughout the health care system.
- Communications – CDC will continue to effectively communicate facts about the disease and how to contain it, particularly targeting communities in these countries that have presented challenges to date.

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 resources provided for the period of the Continuing Resolution will support our response for the 11 week period of the Continuing Resolution and allow us to ramp up efforts to contain the spread of this virus. More than half of the funds are expected to directly support staff, travel, security and related expenses. A portion of the funds will be provided to the affected area to assist with basic public health infrastructure, such as laboratory and surveillance capacity, and improvements in outbreak management and infection control. The remaining funds will be used for other aspects of strengthening the public health response such as laboratory supplies/equipment, and other urgent needs to enable a rapid and flexible response to an unprecedented global epidemic. CDC is working to identify our resource needs for the rest of the fiscal year, and possibly further, as we deal with this evolving situation. CDC will continue to coordinate activities directly with critical Federal partners—including the United States Agency for International Development (USAID), DoD, DHS, and the State Department—and non-governmental organizations. Over the past few weeks, we have seen progress, as the DoD has begun deploying assets to the area and laying the ground work to construct 17 ETUs, train local workers to staff these facilities, and move supplies into the area. In addition, USAID is working closely with non-governmental organizations to scale up efforts in all areas of the response. Currently, there are over 60 burial teams in all 15 counties of Liberia for the management of safe human remains. More than 70 organizations are providing Ebola education and awareness in Liberia, Guinea, and Sierra Leone. Organizations are also working to improve infection control practices in all health facilities to ensure functionality of the healthcare system. We continue to work with national governments, WHO, and USAID to provide for interim measures such as isolation in community settings with proper protections, and improvements to ensure the safe burial of those who have died from the virus.

Though the most effective step we can take to protect the United States is to stop the epidemic where it is occurring, we are also taking strong steps to protect Americans here at home. The imported case of

Ebola in Dallas, diagnosed on September 30<sup>th</sup> in a traveler from Liberia, required CDC and the Nation's public health system to implement rapid response protocols that have been developed in anticipation of such an event. Within hours of confirming that the patient had Ebola, CDC had a team of 10 people on the ground in Dallas to assist the capable teams from the Texas state health department and local authorities. We have worked side-by-side with state and local officials to do all we can to prevent transmission to others. Together, we assessed all 114 individuals who might possibly have had contact with the patient prior to his admission and isolation. We narrowed down the contacts to 10 who may have been around him when he was infectious and 38 others with whom exposure cannot be ruled out. These individuals will be tracked for 21 days for any signs of symptoms, and they will quickly be isolated if symptoms develop. We are also working to identify and learn lessons from the initial patient encounter and other events that complicated our response, and to apply them in any other responses.

We were deeply concerned to have learned last weekend that there had been transmission of the Ebola virus from the first, or "index" patient, to a health care worker. This health care worker had been monitoring her temperature and symptoms, in accordance with CDC guidelines, and upon finding an elevated temperature, immediately reported it to the hospital and was admitted and isolated. And just yesterday, we learned of a second transmission in another health care worker. While we do not yet know exactly how these transmissions occurred, they demonstrate the need to strengthen the procedures for infection-control protocols which allowed for exposure to the virus. We are working very hard to investigate the situation, but are not waiting for the completion of this investigation and have already helped the hospital implement new measures for safety.

In terms of safe and effective care of Ebola patients, we had already begun to increase education and training of health care workers at the facility which cared for the index patient. 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. At this time, we are recommending to the facility that the



number of workers who care for anyone with suspected Ebola be kept to an absolute minimum. We recommend that the procedures that are undertaken to support the care of an infected individual be limited solely to essential procedures. We are examining the issue of personal protective equipment, understanding that there is a balance and putting more on isn't always safer as it may make it harder to provide effective care. And 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. Each day we work to evaluate and improve infection control, and these represent measures put into place so far. CDC has sent additional staff to Texas to assist with this response and we will continue to work closely with the State and local team. In particular, we are closely monitoring other health care workers who were part of the care team, because we now have reason to believe had an elevated risk of exposure.

Despite these latest incidents, we remain confident that our public health and health care systems can prevent an Ebola outbreak here, and that the authorities and investments provided by the Congress have put us in a strong position to protect Americans. To make sure the United States is prepared, as the epidemic in West Africa has intensified, CDC has done the following:

- Instituted layers of protection, starting in affected countries where our staff work intensively on airport exit screening, such as temperature scanning for outbound passengers.
- Provided guidance for airline personnel and for DHS U.S. Customs and Border Protection Officers on how to identify sick passengers and how to manage them. Though it was one of many false alarms, the recent incident with an inbound passenger to Newark, New Jersey shows how CDC's quarantine station at the airport worked with airline, DHS, airport, EMS, and hospital personnel to assess and manage a sick passenger, and to protect other passengers and the public.
- Developed guidance for monitoring and movement of people with possible exposures.

- Along with partners in DHS and state and local health agencies, continually assessed and improved approaches to inbound passenger screening and management, and as the President announced on October 6th, CDC is working with DHS to enhance screening measures at United States airports.
- Worked with American hospitals to reinforce and strengthen infection controls, and CDC has provided checklists and instructions to health care facilities to assess patients for travel history. We have also worked with state and local health departments to ensure that these practices are being followed.
- With state health departments, intensified training and outreach to build awareness since the Dallas case.
- Through the Laboratory Response Network (LRN), expanded lab capacity across the United States – in addition to CDC’s own world class laboratories, 14 LRN labs now have capacity for testing, ensuring that we have access to labs for timely assessment – and surge capacity in case it is needed.
- Developed response protocols for the evaluation, isolation, and investigation of any incoming individuals with relevant symptoms.
- Extensively consulted to support evaluation and, when indicated, tested suspect cases. With heightened alert, we are receiving hundreds of inquiries for help in ruling out Ebola in travelers – a sign of how seriously airlines, border agents, and health care system workers are taking this situation. So far just over a dozen of these hundreds of suspect cases have required testing, and only one (the Dallas patient) has been positive.

Our top priority at CDC is to protect Americans from threats. We work 24/7 to do that. In the case of Ebola, we are doing that in many different ways here at home, but we also need to retain our focus on stopping the outbreak at its source, in Africa.

Working with our partners, we have been able to stop every prior Ebola outbreak, and we will stop this one. It will take meticulous work and we cannot take 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 deployed, identified, and followed 1,000 contacts for 21 days. Even with these resources, one case was missed, which resulted in a new cluster of cases in Port Harcourt, Nigeria. However, due to the meticulous work done in Nigeria, no new cases have been identified, and the outbreak appears to have been extinguished there.

Ending this epidemic will take time and continued, intensive effort. Before this outbreak began, we had proposed, in the FY 2015 President's Budget, an increase of \$45 million to strengthen lab networks that can rapidly diagnose Ebola and other threats, emergency operations centers that can swing into action at a moment's notice, and trained disease detectives who can find an emerging threat and stop it quickly. Building these capabilities around the globe is key to preventing this type of event elsewhere and ensuring countries are prepared to deal with the consequences of outbreaks in 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.

Investments in strengthening health systems in West Africa have been very challenging due to the low capacity of the systems. Strengthening the public health infrastructure in West Africa could detect such outbreaks earlier and contain them. This Ebola epidemic shows that any vulnerability could have widespread impact if not stopped at the source.

In February, the United States Government joined with partner governments, WHO and other multilateral organizations, and non-governmental actors to launch the Global Health Security Agenda (GHSa). Over the next five years, the United States has committed to working with over forty partner countries (with a combined population of at least four billion people) to improve their ability to prevent, detect, and effectively respond to infectious disease threats - whether naturally occurring or caused by accidental or intentional release of pathogens. As part of this Agenda, the President's FY 2015 Budget includes \$45 million for CDC to accelerate progress in detection, prevention, and response, and we appreciate your support for this investment. We are working to evaluate the needs to strengthen the Ebola-affected nations and neighboring ones most at risk, and are asking that GHSa partners make specific commitments to establish capacity in West African countries in two or three years to prevent, detect and rapidly respond to infectious disease threats. The economic cost of large public health emergencies can be tremendous – the 2003 Severe Acute Respiratory Syndrome epidemic, known as SARS, disrupted travel, trade, and the workplace and cost the Asia-Pacific region alone more than \$40 billion. Resources provided for the Global Health Security Agenda can improve detection, prevention, and response and can potentially reduce some of the direct and indirect costs of infectious diseases.

Improving these capabilities for each nation improves health security for all nations. Stopping outbreaks where they occur is the most effective and least expensive way to protect people's health. While this

tragic epidemic reminds us that there is still much to be done, we know that sustained commitment and the application of the best evidence and practices will lead us to a safer, healthier world. 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.