

Senate Committees on Appropriations

and

Health, Education, Labor and Pensions

Ebola in West Africa: A Global Challenge and Public Health Threat

September 16, 2014

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Good afternoon Chairman Harkin, Ranking Members Alexander and Moran, and members of the Health, Education, Labor and Pensions and Appropriations Committees. 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 global health. I am Dr. Beth Bell, Director of the National Center for Emerging and Zoonotic Infectious Diseases at the CDC. I appreciate the opportunity to be here today to discuss the current epidemic of Ebola in West Africa, which illustrates in a tragic way the need to strengthen global health security.

We do not view Ebola as a significant public health threat to the United States . It is not transmitted easily, 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 – are not a factor in the United States. We know how to stop Ebola with strict infection control practices which are already in widespread use in American hospitals, and by stopping it at the source in Africa. There is a window of opportunity to tamp down the spread of this disease, but that window is closing. CDC is committing significant resources both on the ground in West Africa and through our Emergency Operations Center here at home. But this is a whole

of Government response, with agencies across the United States Government committing human and financial resources.

To date, the United States Government has spent more than \$100 million to address the Ebola epidemic, and just last week the U.S. Agency for International Development (USAID) announced plans to make available up to \$75 million in additional funding. In addition, we have just proposed that the Congress provide an additional \$88 million through the continuing resolution process. This funding would allow us to support development and manufacturing of Ebola therapeutic and vaccine candidates for clinical trials and to send additional response workers from CDC as well as lab supplies and equipment. If the Congress includes this additional funding, it would bring our total commitments to date to over \$250 million. Last week, the President indicated that the need to engage the unique logistics and materiel capabilities of the U.S. military on this response.

We need to, and are, working 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 that has been recognized in West Africa and the biggest and most complex Ebola epidemic ever documented. We have now also seen cases imported into Nigeria and Senegal from the initially affected areas, which is of concern.

Ebola has an abrupt onset of symptoms similar to many other illnesses, including fever, chills, weakness and body aches. Gastrointestinal symptoms such as vomiting and diarrhea are common and severe, and 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 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. Catching Ebola is the result of exposure to bodily fluids, which we are seeing occur in West Africa, for example, in hospitals in weaker health care systems and in some African burial practices. Getting Ebola requires exposure to bodily fluids of someone who is ill from – or has died from – Ebola.

The early 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 cultural norms. As of last week, the epidemic surpassed 4,400 cumulative reported cases, including nearly 2,300 documented deaths, though we believe these numbers may be under-reported, by a factor of at least two- to threefold. 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.

Many of the health systems in these countries are weak or have collapsed entirely, and do not reach into rural areas. Health care workers may be limited (for example, we are aware of one nurse for 90 patients in one hospital in Kenema, Sierra Leone), or may not reliably be present at facilities, and those facilities may have limited capacity. Poor infection control in routine health care, along with local traditions such

as public funerals and cultural mourning customs including 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 secondary effects now include the collapse of the underlying health care systems resulting for example, an inability to treat malaria, diarrheal disease, or to safely deliver a child, as well as non-health impacts such as economic and political instability and increased isolation in this area of Africa. 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.

I There are three key things which we need to respond to this epidemic. The first is resources – this epidemic will take a lot of resources to confront. That is why the U.S. Government is putting our resources into this effort and asking the Congress for your assistance. The United Nations believes the cost of getting supplies needed to West African countries to get the Ebola crisis under control will be at least \$600 million. I personally believe that to be an underestimate. The second is technical experts in health care and management to assist in country. Last, is a coordinated, global unified approach, because this is not just a problem for Africa. It's a problem for the world, and the world needs to respond.

Fortunately, we know what we must do. In order to stop an Ebola outbreak, we must focus on three core activities: 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 and 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 has 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 need to strengthen the global response, which requires close collaboration with WHO, additional assistance from our international partners, as well as a coordinated United States Government response. At CDC, we activated our Emergency Operations Center to respond to the initial outbreak, and are surging our response. One of the surge objectives was initial deployment of fifty disease-control experts in thirty days to the region to support partner governments, WHO, and other partners working in the region. We surpassed that goal, and as of last week, CDC has over 100 staff in West Africa, and more than 300 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 five pillars 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’s imperative that we ramp up our efforts to provide adequate space to treat the number of people afflicted with this virus.
- Safe burial practices – Effectively shifting local cultural norms on burial practices is one of the keys to stopping this epidemic. CDC is providing technical assistance for safe burials.

- Health care system strengthening – 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, communities, and households.
- Communications – CDC will continue to work on building the public’s trust in health and government institutions by effectively communicating facts about the disease and how to contain it, particularly targeting communities 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.

CDC’s request for an additional \$30 million for the period of the Continuing Resolution will support our response and to 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. Should outbreaks recur in this region, they will have the experience and capacity to respond without massive external influx of aid, due to this investment. 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 will continue to coordinate activities directly with critical federal partners, including USAID and non-governmental organizations.

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. For example, it is possible that infected travelers may arrive in the United States, despite all efforts to prevent this; therefore we need to ensure the United States' public health and health care systems are prepared to rapidly manage cases to avoid further transmission. We are confident that our public health and health care systems can prevent an Ebola outbreak here, and that the authorities and investments provided by your Committees 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:

- Assisted with extensive screening and education efforts on the ground in West Africa to prevent ill travelers from getting on planes.
- Developed guidance for monitoring and movement of people with possible exposures, and guidance and training for partners (including airlines, Customs and Border Protection officers, and Emergency Medical Systems personnel)
- Provided guidance for travelers, humanitarian organizations, and students/universities
- Advised United States' health care providers to consider Ebola if symptoms present within three weeks of a traveler returning from an affected area
- Provided guidance for infection control practices in hospitals to prevent further spread to United States health care workers and communities
- Developed response protocols for the evaluation, isolation and investigation of any incoming individuals with relevant symptoms.

- Expanded the capacity of our Laboratory Response Network to rapidly test suspected cases so that appropriate measures can be taken.

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 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.

Ending this epidemic will take time and continued, intensive effort. The FY 2015 President's Budget includes 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.

There is worldwide agreement on the importance of global health security, but as the Ebola epidemic demonstrates, there is much more to be done. All 194 World Health Organization Member States have adopted the International Health Regulations (IHR). Progress has occurred over the past years, but 80 percent of countries did not claim to meet the IHR capacity required to prevent, detect, and rapidly

respond to infectious disease threats by the June 2012 deadline set by WHO. No globally linked, interoperable system exists to prevent epidemic threats, detect disease outbreaks in real-time, and respond effectively. Despite improved technologies and knowledge, concerning gaps remain in many countries in the workforce, tools, training, surveillance capabilities, and coordination that are crucial to protect against the spread of infectious disease, whether naturally occurring, deliberate, or accidental. The technology, capacity, and resources exist to make measurable progress across member countries, but focused leadership is required to make it happen. If even modest investments had been made to build a public health infrastructure in West Africa previously, the current Ebola epidemic could have been detected earlier, and it could have been identified and contained. This Ebola epidemic shows that any vulnerability could have widespread impact if not stopped at the source.

Earlier this year, the United States Government joined with partner governments, WHO and other multilateral organizations, and non-governmental actors to launch the Global Health Security Agenda. Over the next five years, the United States has committed to working with at least thirty 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. 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 to the Asia-Pacific region alone \$40 billion. Resources provided for the Global Health Security Agenda can improve detection, prevention, and response and 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 resources proposed in the FY 2015 President's Budget, we can stop this epidemic, and leave behind 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 terrible outbreak and I look forward to answering your questions.