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Lead Inspector General Quarterly Progress Report on U.S. Government Activities

INTERNATIONAL EBOLA RESPONSE AND PREPAREDNESS

March 31, 2015



Cover photo caption: Case investigators interview families and community members to establish who may have come into contact with an EVD patient. (Photo by Neil Brandvold, USAID, Monrovia, Liberia, February 2, 2015)

FOREWORD

As of March 31, 2015, the Ebola epidemic in West Africa had infected about 25,000 people resulting in almost 10,400 fatalities worldwide. National healthcare systems and economies in Liberia, Sierra Leone, and Guinea have been severely impacted. As a global health threat and a national security priority, the Ebola virus disease outbreak spurred a U.S. Government response that has been significant in size, scope, and cost. Several federal departments and agencies are involved in the whole-of-government response for reducing Ebola transmission in West Africa, as well as efforts to address second-order effects and better prepare international health systems for future outbreaks. The resources committed to this international crisis, including \$4.829 billion in fiscal year 2015 emergency appropriations, are extensive.

The November 2014 activation of U.S. military reservists in association with the U.S. mission to combat the Ebola outbreak in West Africa, Operation United Assistance, triggered provisions of the Inspector General (IG) Act of 1978 (5 U.S.C. App.), as amended, related to oversight of contingency operations. Under Section 8L of the IG Act, the Offices of Inspector General (OIGs) for the Department of Defense (DoD), the U.S. Agency for International Development (USAID), and Department of State (DOS) are required to coordinate oversight efforts and report on the progress of overseas contingency operations and corresponding oversight efforts. In light of the whole-of-government response to the outbreak and the significant role that the Department of Health and Human Services (HHS) has had in international Ebola response efforts, HHS OIG has also actively engaged in these coordination efforts.

Together, the four OIGs are working to ensure independent and comprehensive oversight of related U.S. Government funds,

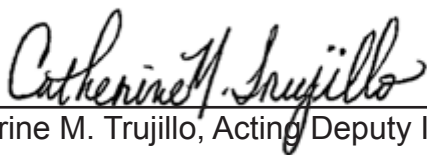
FOREWORD

activities, and programs. This coordinated approach helps reduce the risks to taxpayer dollars inherent in complex crisis response and preparedness efforts in international settings. The Inspector General community is committed to deterring waste, fraud, and abuse and promoting effective use of U.S. Government resources, and is pleased to be able to exercise this commitment through the implementation of the lead inspector general mandate for oversight of overseas contingency operations.

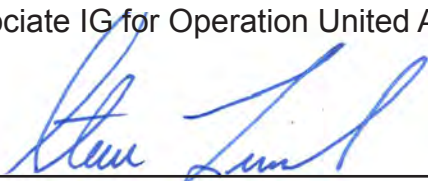
This quarterly report describes U.S. Government activities related to the international Ebola response and preparedness efforts and the oversight of the federal departments and agencies primarily responsible for this effort. This report meets the quarterly reporting requirements to Congress required under Section 8L of the IG Act and covers the period from the beginning of the crisis through the quarter ending March 31, 2015.



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INTRODUCTORY MESSAGE

MESSAGE FROM THE LEAD AND ASSOCIATE INSPECTORS GENERAL

We are pleased to provide the first quarterly report to Congress describing the U.S. Government's response to the 2014 outbreak of the Ebola virus disease in West Africa. In this report, we are describing activities and resources associated with Operation United Assistance, the U.S. mission to combat the Ebola virus disease in West Africa, and helping inform Congress and the public about efforts to prevent, prepare for, and respond to the Ebola virus. Our first quarterly report on the subject covers the period from the start of the outbreak through March 31, 2015.

This report provides background information on the Ebola virus and prior outbreaks, as well as developments relating to the current outbreak that originated in West Africa. It also provides information on the framework for the U.S. Government response and how it is organized and staffed. In addition, this report addresses the funding and appropriations supporting the effort, discusses related programs and activities, and describes oversight, coordination, and planning work undertaken by the respective OIGs.

Pursuant to section 8L of the IG Act, the OIGs for DoD, DOS, and USAID formed a collaborative partnership under the lead inspector general requirement to provide oversight of this designated overseas contingency operation. The three OIGs will implement a comprehensive and synchronized oversight and reporting framework. Through the appointment of the Associate IG for Operation United Assistance, USAID OIG was identified to lead the development of this report. The content in this report reflects input from all three OIGs mentioned above, as well as from the OIG for

INTRODUCTORY MESSAGE

HHS, which has been a primary participant in U.S. Government efforts to combat Ebola.

In spearheading this interagency effort, we remain committed to the principles of high-quality oversight with the goal of promoting efficiency and effectiveness. We are committed to working with our interagency partners to continually advance oversight of the U.S. Government efforts to combat the Ebola outbreak in West Africa.

Lead Inspector General for Operation United Assistance
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EXECUTIVE SUMMARY

On March 13, 2014, the Guinean Ministry of Health issued an alert concerning an unidentified disease and, together with the World Health Organization (WHO) and Médecins Sans Frontières (MSF, Doctors Without Borders), began an investigation into an outbreak of hemorrhagic fever. Laboratory tests subsequently confirmed that the outbreak was caused by the Ebola virus. On March 23, 2014, WHO announced the Ebola outbreak in Guinea and within days both Liberia and Sierra Leone reported possible cases of the Ebola virus disease (EVD). The Ebola virus is one of the most infectious viruses known, transmissible through contact with infected bodily fluids, and the resulting disease has a high case fatality rate. The case fatality rate for the current EVD outbreak in West Africa has been 70.8 percent.

No cases of EVD had ever been previously recorded in West Africa, and the governments of Liberia, Sierra Leone, and Guinea had limited to no experience in identifying EVD cases or containing the disease. A rapid increase in the number of EVD cases and the spread of the disease in urban settings overwhelmed an already weakened healthcare system and diminished workforce. WHO reported a surge in EVD cases from approximately 132 reported cases in March 2014 to 1,440 cases in July 2014. By the end of July 2014, the Government of Liberia had shut down schools, quarantined communities most at risk, and used military personnel to enforce the quarantine.

In early August 2014, the U.S. Ambassador to Liberia and chargés d'affaires for Guinea and Sierra Leone declared the EVD outbreaks in their respective countries disasters. International health officials described the situation as “precarious” as EVD spread beyond the borders of the three affected countries to Nigeria and Senegal. WHO declared an international public health emergency on

EXECUTIVE SUMMARY

August 8, 2014, and by the end of that month, EVD infection numbers had more than doubled since July to 3,052 cases.

WHO published an Ebola Response Roadmap in late August 2014 that outlined the roles and responsibilities of governments and organizations involved in the effort to combat EVD in West Africa. In September 2014, the U.S. Government publicly identified key goals and intensified its efforts to combat EVD. By October 1, 2014, the cumulative number of EVD cases and fatalities in West Africa had more than doubled over August levels. By the end of October, the number of victims had almost doubled once more.

The number of new cases began to decline at the start of the new year before rebounding again in early February 2015. According to international health officials, EVD response efforts confronted a broad geographical spread of incidents, some resistance within affected communities, and areas of uncontrolled transmission. By late February 2015, contact tracing efforts had not identified all transmission chains, an indication that community engagement work had not yet broken down resistance to and mistrust of the EVD response effort. As of March 29, 2015, a total of 25,213 EVD cases had been recorded worldwide, with 10,460 fatalities.

Initial U.S. Government response efforts were supported by funds appropriated under existing accounts. As response efforts grew in intensity, the President transmitted an emergency appropriations request to Congress and in December 2014, Congress appropriated \$2.526 billion in funds specifically designated for international efforts to combat Ebola with an additional \$2.303 billion for use in either domestic or international settings.

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The U.S. Government applied a whole-of-government approach to the Ebola epidemic response. USAID was designated as the lead federal agency to manage and coordinate the U.S. effort to fight the Ebola outbreak overseas. The Centers for Disease Control and Prevention (CDC) led the medical and public health component of U.S. Government response efforts, and DOS had responsibility for advancing related diplomatic efforts. In September 2014, DoD, under Operation United Assistance (OUA), began direct support to civilian-led response efforts. Other federal agencies also made significant contributions to the overall U.S. response.

Based on available funding information as of March 31, 2015, the U.S. Government had obligated \$1.164 billion and disbursed \$305.1 million in its effort to combat Ebola abroad. These efforts have been organized around a four pillar strategy for reducing EVD transmission in West Africa:

1. Controlling the Outbreak
2. Mitigating Second Order Impacts of the Crisis
3. Building Coherent Leadership and Operations
4. Strengthening Global Health Security

The primary focus of U.S. Government activities during this reporting period was on controlling the outbreak. In March 2014, CDC deployed personnel to help with initial response efforts. Following the August 2014 disaster declarations in Guinea, Liberia, and Sierra Leone, USAID deployed a Disaster Assistance Response Team to the region to assess conditions, coordinate the interagency response, and identify gaps in the Ebola response effort.

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Effective screening, aggressive contact tracing, rapid EVD identification, and prompt isolation of EVD patients have been important aspects of the strategy to halt the EVD epidemic as they helped prevent further transmission. CDC, DoD, and USAID-funded partners trained thousands of healthcare workers on how to screen individuals for potential EVD signs and symptoms and how to implement contact tracing programs. To increase diagnostic capacity, the U.S. Government provided mobile laboratories and opened new laboratory testing facilities in the region. The U.S. Government constructed 15 Ebola Treatment Units and funded Community Care Centers in the region to isolate and treat EVD victims and help stanch the spread of the disease.

U.S. Government activities have also included measures to promote coordination, operations, and communication surrounding the response. The U.S. Government supported the operation of emergency operations centers, safe burial teams, and core healthcare systems in West Africa. To raise public awareness of Ebola symptoms, modes of transmission, and effective prevention practices, the U.S. Government supported communication and community outreach efforts.

At the start of the EVD outbreak in West Africa, there were no tested and approved vaccines capable of preventing transmission of the disease to humans. Several federal agencies have worked to develop new EVD diagnostic tools, vaccines, and treatments. During the reporting period, two vaccines and several treatments underwent trials with patients in Guinea, Liberia, and Sierra Leone.

The urgency and scale of the U.S. Government response as well as the regional context in which it has occurred have increased the risk of fraud and waste in related activities and added to the challenge

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of properly implementing corresponding plans. In the 2013 National Defense Authorization Act, P.L. 112-239, Congress prescribed a new oversight framework for overseas contingency operations. This law added Section 8L to the IG Act, which provided for increased coordination, reporting, and oversight relating to overseas contingency operations by the Inspectors General for DoD, DOS, and USAID. Under Section 8L, DoD's IG was designated as the Lead IG on February 24, 2015, after the designation of OUA as a contingency operation. The DoD IG, in turn, appointed USAID's Acting Deputy IG as the Associate IG to lead OUA oversight planning, coordination, and reporting activities.

DoD and USAID OIG as well as the OIGs for DOS, HHS, and the Department of Homeland Security have all performed or planned oversight of U.S. Government activities in support of the international Ebola response and preparedness programs and activities. During this reporting period, the IG community has issued two reports related to Ebola response and preparedness and work is in progress or planned on nine other oversight projects. In addition, USAID OIG has established a dedicated Ebola Hotline to receive complaints of fraud, waste, or abuse relating to EVD response activities and has started to receive information that has informed oversight efforts. These efforts help provide assurance that the funds are spent as intended and that U.S. Government activities are implemented in as effective and efficient manner as possible.

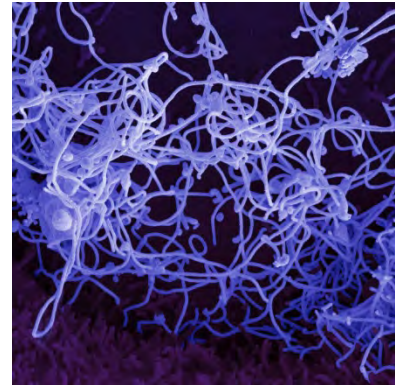
THE VIRUS

THE EBOLA VIRUS

First recorded in 1976 with two simultaneous outbreaks, the Ebola virus takes its name from a river near the village in the Democratic Republic of Congo (then Zaire) where the Ebola virus was first identified.¹ The Ebola virus is a zoonotic pathogen, meaning that it normally resides in animals and can be transmitted to humans. The mechanism of transmission to humans is currently unknown. Once a human is infected, the virus spreads from person to person through contact with bodily fluids.

Scientists believe indigenous bats serve as the reservoir population for Ebola virus and carry the virus without showing symptoms.² Researchers theorize that the Ebola virus is transmitted from bat hosts to other susceptible wildlife through urine and feces deposits on the jungle floor, or saliva remaining on partially eaten fruit. Jungle primates also eat bats, providing an additional means for the Ebola virus to cross species.³ Outbreaks in humans originate from contact with wildlife, though the mechanism remains to be identified. The Ebola virus then spreads from person to person through close contact with bodily fluids. While the trade in bushmeat (the hunting of wildlife or discovery of an animal carcass for food) may be the most likely cause of Ebola transmissions to human populations, any contact with Ebola-carrying species creates the risk for transmission.⁴

The Ebola virus disease is classified as a viral hemorrhagic fever because of its severe impact on multiple organ systems.⁵ The Ebola virus infects many types of cells in the human body, especially those of the immune system, the liver, and the lining of blood vessels. The incubation period is typically 8-12 days



Ebola Virus isolated from patient blood samples. (Photo courtesy of National Institute of Allergy and Infectious Diseases, November 2014)



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from exposure, when the patient experiences sudden onset of fever, chills, and body aches. Several days later, there are often symptoms of vomiting, diarrhea, and bruising from blood vessels leaking. As this bleeding occurs, the body's normal ability to fight off infection and cause the blood to clot is overwhelmed, and the infected liver is no longer able to make proteins essential for blood clotting. Both internal and external bleeding can occur.⁶ Significantly, the virus is present in many bodily fluids other than blood, including saliva, breast milk, urine, semen, and sweat. Coughing, vomiting, and diarrhea are physical reactions to EVD common in late-stage patients, which introduce bodily fluids that can be loaded with viral particles into surrounding areas.

The Ebola virus is one of the most infectious viruses known. As few as 10 viral particles are sufficient for infection.⁷ The risk for care takers, medical professionals, and anyone in close proximity to the EVD victim greatly increases during late stages of the disease. Any contact with EVD patients' bodily fluids, including contact with materials that had contact with an infected body or bodily fluids, poses a risk for transmission of the disease.⁸ Mucous membranes, such as the eyes, nose, or mouth, provide a means of ingress for the disease in uninfected people. EVD can also be spread through a break in the skin; a small cut or accidental contact with a needle is sufficient to transmit the virus.⁹

During the 2014-15 West Africa outbreak, the average EVD incubation period has been about 11 days, with 95 percent of patients presenting symptoms within 21 days. For this reason, CDC calls for 21 days of isolation for any individual who may have come into contact with the Ebola virus.¹⁰



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EVD can progress rapidly, with severe symptoms beginning as early as 5 days after the first signs of disease. According to an October 2014 WHO study, the average period of time from first symptom to admission to a hospital in West Africa was about 5 days, during which time patients were infectious in the community. After hospitalization, those who died typically did so about 4 days later, while those who survived were discharged in about 12 days.¹¹

Disposing of the corpses of the victims presents a point of significant risk to the living as transmission risk continues after death. The virus continues to be shed in the blood and bodily fluids of a corpse and can remain infectious in the environment for several days. CDC disinfection guidelines state that the Ebola virus can survive on a dry surface for several hours.¹² The virus in a bodily fluid can remain infectious for several days at room temperature.¹³ Many viruses survive better in warm, moist environments, so the higher temperatures and humidity in West Africa may lead to longer survival of the Ebola virus in that environment.¹⁴

Previous outbreaks of EVD have predominantly occurred in Central Africa. The Democratic Republic of Congo (DRC) and its predecessor Zaire have seen 10 total EVD outbreaks since 1976. Until the EVD outbreak of 2014, all known previous African outbreaks of EVD had originated in DRC or countries sharing its border.¹⁵ While previous outbreaks had similarly high fatality rates, none have taken on the scale of the ongoing outbreak in West Africa. Tactics to end past EVD outbreaks have included field work to define the extent of the outbreaks; surveillance,



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isolation, and quarantine; medical care provided through home visits; extensive and correct use of personal protective gear; modified funeral rituals; and thorough disinfection practices.¹⁶

THE WEST AFRICA OUTBREAK

On March 13, 2014, the Guinean Ministry of Health issued an alert concerning an unidentified disease.¹⁷ WHO announced its involvement that same day, believing that an outbreak of Lassa fever, a viral hemorrhagic fever highly prevalent in West Africa, was under way. Together, WHO, the Guinean Ministry of Health, and non-profit MSF began an investigation into the illness.¹⁸ After laboratory tests confirmed that the hemorrhagic fever outbreak was caused by the Ebola virus, WHO announced the EVD outbreak in Guinea on March 23, 2014.¹⁹ Tracing suspected cases back in time, WHO identified the first victim of this outbreak as an 18-month-old boy from an area close to where Guinea shares a border with northern Liberia. The child died on December 28, 2013.²⁰

Diagnosis of the EVD outbreak in West Africa was delayed for several reasons. EVD shares symptoms with other illnesses common in West Africa, including malaria, Lassa fever, and typhoid.²¹ These symptoms include fever, headache, fatigue, and body aches. Lassa fever and malaria are present at high incidence rates in this region, and since EVD had never occurred in West Africa before, there was no initial reason to suspect it. Further, the governments of Liberia, Sierra Leone, and Guinea had no experience in identifying an EVD outbreak or containing its transmission.²²



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Guinea borders Liberia and Sierra Leone, and the populations of the three countries are interrelated and mobile, crossing borders frequently for trade or while maintaining family and social ties. Within days of the WHO announcement of the EVD outbreak in Guinea, both Liberia and Sierra Leone had announced EVD cases as well. On April 1, 2014, Guinea reported 24 confirmed cases of EVD, Liberia had 2 confirmed cases to report, and Sierra Leone was monitoring 2 probable cases of EVD infection.²³ By late April 2014, Guinea had reported 208 “clinical cases” of EVD and 136 deaths. Efforts to identify those who had come into contact with individuals suffering from the illness led medical authorities to place 217 others in Guinea under medical observation.²⁴ According to WHO, Liberia had 34 probable cases of EVD with 6 confirmed cases and 6 deaths at the time. Liberia had 162 total contacts to trace, 59 of whom had completed the 21-day follow-up period and were no longer under medical observation.²⁵

Sierra Leone reported its first EVD case on May 25, 2014.²⁷ By the end of May 2014, WHO reported that Sierra Leone had 50 clinical cases of EVD and 6 deaths spread across 5 distinct geographical regions. Guinea had 291 clinical cases of EVD with 193 deaths spread across seven regions. Liberia had one suspected death, which was also being investigated in Sierra Leone.²⁸ This last death illustrated the challenge of porous borders which complicated containment and data gathering in the three countries. Further, in its report for the period, WHO described “community resistance, inadequate treatment facilities and insufficient human resources in certain affected areas” as challenges facing the three countries in addressing the epidemic.²⁹

DEFINING EVD CASES

As used by the international medical community in connection with EVD, the term “clinical cases” includes confirmed, probable, and suspected EVD cases and fatalities.

Confirmed cases are those cases in which EVD has been established through laboratory testing.

Probable cases are cases in which the victim has been evaluated by a clinician, or in which a deceased person suspected of having EVD is known to have had contact with a confirmed case.

Suspected cases of EVD are those in which the victim has a sudden high fever, and three EVD symptoms, or contact with a suspected, probable, or confirmed case of EVD.²⁶



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On June 17, 2014, the Liberian government announced that Ebola was present in its capital, Monrovia.³⁰ While this was not the first instance of EVD in an urban population, as Guinea's capital Conakry recorded cases in late March 2014, the presence of EVD in Monrovia was a development of particular concern due to the city's dense, crowded neighborhoods and deteriorating health infrastructure.³¹ Later that month, MSF reported the spread of the disease to more than 60 distinct locations throughout Guinea, Sierra Leone, and Liberia as a point of risk for EVD spreading even further. A senior representative with the nonprofit organization called the EVD epidemic "out of control."³² Later that month, health authorities reported a total of 618 EVD cases and 357 EVD deaths.³³ At the time, Guinea led the three affected West African countries with EVD cases numbering 390.³⁴ Sierra Leone had 166 EVD cases and Liberia 51 cases.³⁵

WHO reported a surge in EVD cases in July 2014.³⁶ Infection and fatality statistics as of July 30, 2014, indicated that the total number of cases of EVD had reached 1,440 with 826 deaths.³⁷ By the end of month, the Government of Liberia had quarantined communities most at risk and put troops in place to enforce the quarantine.³⁸ Meanwhile, CDC issued a travel warning to Americans to avoid nonessential travel to the Guinea, Liberia, and Sierra Leone.³⁹ WHO described the situation as "precarious," as EVD spread beyond the borders of Guinea, Liberia, and Sierra Leone, with the first Nigerian EVD fatality taking place on July 26, 2014.⁴⁰ At the end of July 2014, news agencies reported that Sierra Leone lost its leading physician in the fight against EVD, Dr. Sheik Umar Khan, to the disease.⁴¹

* Mortality rate based on WHO data as of April 1, 2015.

2014-2015
West Africa
41.5%
Mortality*

On August 2, 2014, an American doctor who had been working as a missionary

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physician in Liberia was flown to Atlanta, GA, for treatment after contracting EVD.⁴² A second American, a missionary nurse with EVD was flown to Atlanta from Liberia for treatment 3 days later.⁴³ A Spanish priest who had been working in Monrovia, Liberia, contracted EVD and was flown to Spain for treatment, where he died on August 12, 2014.⁴⁴ Also, in August 2014, a British healthcare provider was flown back to the United Kingdom after reportedly contracting EVD in Sierra Leone.⁴⁵



Cumulative EVD Case Counts by Country, March 25, 2014 - August 8, 2014

Source: CDC, 2014 West Africa Outbreak: Previous Case Counts

WHO declared a global emergency on August 8, 2014.⁴⁶ A subsequent situation assessment report noted critical differences between the 2014 EVD outbreak and previous outbreaks, including the presence of EVD in urban settings and the lack of institutional experience with EVD. The assessment

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also highlighted a lack of personal protective equipment (PPE) and training on infection prevention and control.⁴⁷

The social nature of EVD transmission was of particular concern. Lines of transmission can reflect the social connections between people, families, and communities. Funerals, which are a practice for honoring someone who has recently died and are practiced the world over, became events with potential to foster the rapid spread of EVD into new communities.⁴⁸ Social settings—such as schools, churches, and marketplaces—presented further opportunities for disease transmission. As the EVD outbreak in West Africa worsened and people became more aware of the dangers of social interaction, West African governments closed schools, banned social gatherings, imposed quarantines, and closed borders.⁴⁹

UNRELATED OUTBREAK

On August 24, 2014, the DRC declared its own Ebola outbreak, distinct from the epidemic taking place in West Africa.⁵⁰ Laboratory analysis confirmed that the two outbreaks were associated with different viral lineages.⁵¹ After 42 consecutive days without another reported case of the disease, on November 21, 2014, WHO announced that the DRC outbreak was over.⁵²

By the end of August 2014, EVD infection numbers had more than doubled over the previous month to 3,052. EVD had spread beyond source countries in West Africa to Nigeria and Senegal.⁵³ Meanwhile, related deaths had also nearly doubled, with 1,546 EVD fatalities according to WHO.⁵⁴

Projections on the future trajectory of the epidemic became more alarming. In late September 2014, CDC estimated that, provided there were no additional interventions or changes in social behavior in Liberia and Sierra Leone, between 550,000 and 1.4 million people in West Africa could be infected by January 2015.⁵⁵

By October 1, 2014, the number of EVD cases and fatalities in West Africa had more than doubled over the levels reported in August 2014, registering at 7,157 and 3,330, respectively.⁵⁶ After Mali confirmed its first case of EVD on October 24, 2014, the case was traced back to Guinea, where an ill child and her grandmother attended the funeral of the child's mother, who had shown

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symptoms of EVD.⁵⁷ The grandmother and the child traveled from Guinea to Mali via a bus while the child was exhibiting symptoms of EVD, creating the opportunity for infection of a large number of people.⁵⁸ The case highlighted the challenges of containing EVD in an area with porous borders as well as the broader issue of contact tracing when EVD enters populous areas.

By the end of that month, the number of reported victims of the West African EVD outbreak had almost doubled once more to 13,567.⁵⁹ Within the most heavily affected countries, the geographic reach of EVD had spread, with every district in Liberia and Sierra Leone reporting the presence of EVD by October 29, 2014.⁶⁰

DATA GATHERING

In a health crisis such as the EVD outbreak in West Africa, epidemiological data serves multiple functions. It can help healthcare practitioners, epidemiologists, and the international aid community determine appropriate response activities. Projections based on this data also help match resources with community need. This outbreak has spawned new approaches for predicting and tracking EVD, such as the use of cell phone data to predict areas where EVD might erupt next.⁶¹ However, obtaining complete data reflecting hard numbers of EVD cases and deaths, as well as thorough contact tracing have proven difficult.

These efforts have been complicated by the fact that the disease was new to the region and began to spread across an unprecedented geographical area and appeared in urban settings.⁶² Factors that have reportedly made data-gathering more difficult included the disease's geographic reach; EVD

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victims either choosing not to seek medical assistance or being turned away; limited laboratory capacity; and burials that took place without the assistance of specialized EVD burial teams.⁶³ Additionally, the breakdown of healthcare systems and the similarities between EVD symptoms and those symptoms associated with other locally-common diseases meant that any death that was not obviously due to some other cause could have been classified as a suspected EVD death. Without the adequate resources to perform a laboratory test for EVD on each body, an accurate count of the number of EVD deaths was impossible.⁶⁴

From the outset, international health organizations warned about data uncertainty issues. In a June 2014 EVD Risk Assessment, WHO noted that difficulties associated with fieldwork in Sierra Leone made underrepresentation of EVD deaths likely.⁶⁵ The September 2014 CDC estimated projection of the future spread of EVD was based on the assumption that only 1 in every 2.5 cases was being reported.⁶⁶

WHO reports regarding the number of EVD cases and fatalities include a disclaimer that “data are based on official information reported by ministries of health. These numbers are subject to change due to ongoing reclassification, retrospective investigation and availability of laboratory results.”⁶⁷

The first person-to-person transmission outside Africa was documented in October 2014.⁶⁸ On October 9, 2014, WHO announced that a Spanish nurse had contracted the Ebola virus in the course of caring for a Spanish citizen who had contracted the disease in Sierra Leone.⁶⁹ One day later, on October 10, 2014, a Dallas nurse tested positive for EVD after

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caring for an EVD-positive man who had traveled from Liberia to Texas while asymptomatic.⁷⁰

The United Nations (UN) identified a secondary crisis associated with the Ebola epidemic—food shortages.⁷¹ Border closures, reduced regional trade, and reductions in foreign investment all played a role in food shortages in West Africa. Furthermore, the UN predicted shortages in agricultural labor because of EVD fatalities, placing additional strain on food production in the region.⁷²

A quick response in nearby countries affected by EVD, including Mali, Nigeria, and Senegal, served to contain EVD outbreaks and minimize fatalities. Nigeria's EVD crisis began with the confirmation of its first case in Lagos on July 23, 2014, and ended on October 20, 2014.⁷³ Senegal's EVD outbreak began in August 2014 and was declared over on October 17, 2014.⁷⁴ Mali's outbreak lasted from October 24, 2014, to January 18, 2015.⁷⁵ As of the end of January 2015, Mali had 8 cases of EVD and 6 fatalities; Nigeria had seen 20 cases of EVD and 8 deaths; Senegal had only 1 EVD infection and no deaths.⁷⁶ To declare an outbreak over, a country must go for 42 days, or two 21-day quarantine periods, with no new EVD infections.⁷⁷ By the end of the reporting period, Mali, Nigeria, and Senegal had all maintained their EVD-free status, although porous borders and the interconnected populations required continuing vigilance.⁷⁸

By the end of December 2014, the total number of reported EVD cases worldwide stood at 20,206 and the EVD fatality count was 7,905.⁷⁹ Challenges associated with collecting accurate data persisted, including underreporting of deaths and, in some places, individuals with EVD symptoms hiding because of mistrust of governmental or healthcare institutions, or the fear of being

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ostracized by their community.⁸⁰ Although Guinea, Liberia, and Sierra Leone reportedly had a sufficient number of beds required to handle their respective EVD caseloads, WHO reported that those beds were not distributed in areas where they were most needed. While capacity existed to respond, it was not flexible enough to meet the crisis where it was most acute.⁸¹

Early reports from January 2015 noted “no identifiable downward trend,” but as the month progressed, the number of new cases began to decrease.⁸² While encouraging, these new cases were still spread out geographically and emerged in areas that had previously been reported as free of the disease.⁸³ As of January 25, 2015, there were a total of 22,092 EVD cases, and 8,810 fatalities worldwide.⁸⁴

The beginning of February 2015 saw an increase in the number of new EVD cases.⁸⁵ According to international health officials, EVD response efforts continued to be challenged by ongoing resistance within affected communities, a broad geographical spread of incidents, and areas of uncontrolled transmission. With the wet season in West Africa approaching, remote areas were likely to become increasingly difficult for humanitarian support to reach.⁸⁶

A single unsafe burial, which took place in Guinea early in January 2015, led to an additional outbreak of 11 confirmed EVD cases by February 4, 2015, highlighting the ongoing need for safe burials.⁸⁷ Security incidents and community refusals to cooperate reportedly further complicated the responses to the EVD outbreak.⁸⁸

By late February 2015, contact tracing efforts had not identified all transmission chains, an indication that community engagement work had not yet broken down resistance to, and mistrust of the EVD response effort. According to WHO, “a significant number of

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individuals [were] still either unable or reluctant to seek treatment.”⁸⁹ By that point, 23,726 EVD cases had been identified worldwide, with 9,604 fatalities.⁹⁰

The problem of community resistance to EVD protocols had not been fully addressed by March 2015, and unknown transmission chains resulted in new EVD cases in the community. Unsafe burials continued to be reported after the fact. Gains in some areas, such as in Liberia—which had no new EVD cases to report in the week ending March 4, 2015—were offset by security incidents, such as local residents attacking healthcare workers and high fatality rates in Guinea and Sierra Leone.⁹¹ Treatment of the sick and disposal of deceased EVD victims continued to occur in community settings, rather than at facilities established to handle both safely. In Guinea, for example, more than half of EVD positive deaths reported in the week ending March 8, 2014, took place in community settings rather than in EVD facilities.⁹² WHO tied ongoing community deaths to difficulties engaging with impacted communities, and security incidents involving local communities continued.⁹³

STIGMA

Fear of contracting EVD is high in Guinea, Liberia, and Sierra Leone. When fear leads to safe burials, cooperative contact tracing, and patients being treated at facilities equipped to handle EVD patients, the fight against the disease is helped. When that fear leads to stigma, social isolation, and violence, progress toward the goal of no new EVD infections can be hindered.⁹⁴ Some survivors of EVD, many of whom have suffered significant losses beyond their personal experience with a serious illness, have reportedly returned to their

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communities to face rejection by family, eviction by landlords, and exclusion from social institutions.⁹⁵ Those local workers most critical to halting the spread of EVD—healthcare workers, members of burial teams, and contact tracers—reportedly have been similarly ostracized for their work.⁹⁶ For now, survivors can find solace, and, in some cases, employment at survivor’s clinics.⁹⁷

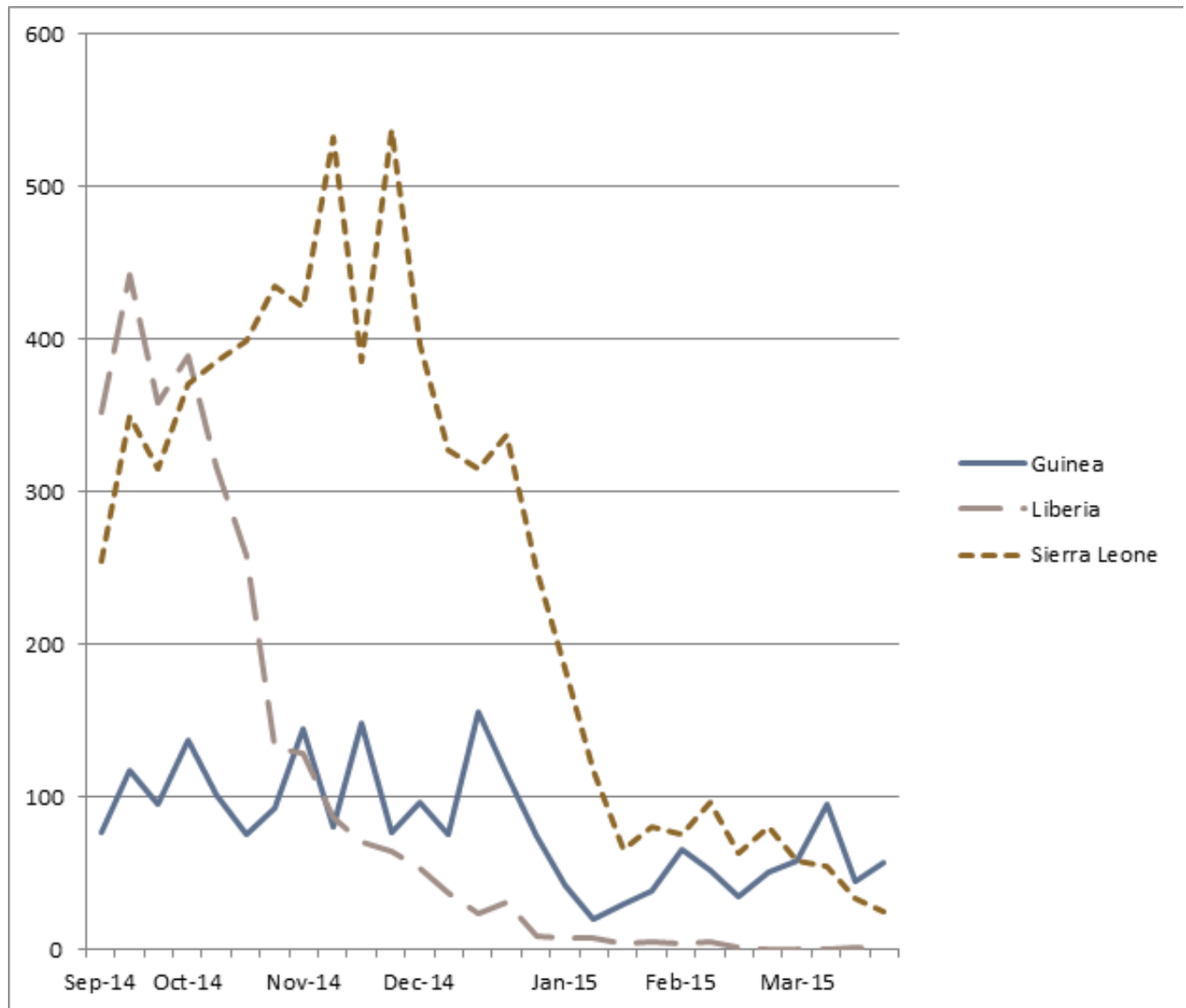
By March 25, 2015, 79 new EVD cases had been confirmed in the week ending March 22, 2015, representing the lowest total of new cases reported in a week thus far in 2015. By March 29, 2015, a total of 25,213 EVD cases had been recorded worldwide, with a cumulative total of 10,460 fatalities.⁹⁸

March 2015 marked a year since the identification of the EVD outbreak in West Africa. The international community had mobilized in an unprecedented effort to bring the outbreak under control, but in the year since the outbreak was announced, more



EVD survivors leave their handprints on the wall outside of an Ebola Treatment Unit. (Photo by Adam Parr, USAID)

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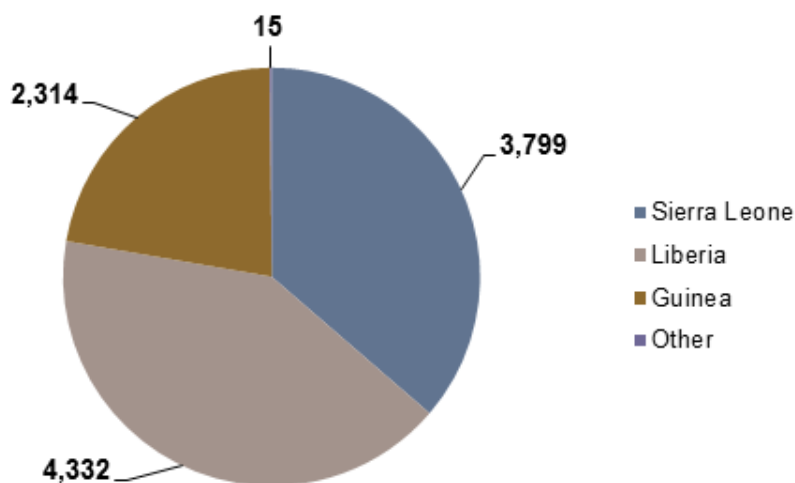


Number of Confirmed EVD Cases in West Africa by Week (September 2014 - March 2015)

Source: WHO Ebola Data and Statistics Repository, Countries with intense transmission. (<http://apps.who.int/gho/data/node.ebola-sitrep.ebola-country?lang=en>)

than 10,000 individuals had died of EVD, more than in all other EVD outbreaks combined.⁹⁹ Although the worst case scenarios predicted earlier in the crisis had not taken place, new infections continued to arise. To be declared virus-free by international health authorities, the countries of Liberia, Guinea, and Sierra Leone would each have to achieve a 42-day period with no new EVD cases.¹⁰⁰

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Distribution of EVD Deaths as a Result of the 2014 - 2015 West Africa Outbreak (as of March 29, 2015)

Totals as of March 29, 2015. Data from WHO reporting and subject to WHO caveats as follows: Data are based on official information reported by ministries of health. These numbers are subject to change due to ongoing reclassification, retrospective investigation and availability of laboratory results.

Transmission chains continued to occur outside of surveillance mechanisms designed to detect the disease, and every EVD patient experiencing symptoms who remains outside of an EVD treatment center poses a risk that wide-scale epidemic conditions could occur once again. In late March 2015, according to WHO, “the fact that fewer than half of cases arose from known contacts, and the number of reported unsafe burials has increased, suggests that the outbreak in Guinea continues to be driven by unknown chains of transmission.”¹⁰¹

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MORTALITY RATES

With the aforementioned difficulty obtaining solid data in the 2014-2015 West African EVD outbreak, determining accurate mortality rates has been difficult. According to an October 2014 study, when mortality rates for the West Africa EVD outbreak were calculated using only confirmed cases and deaths, the EVD fatality rate was 70.8 percent.¹⁰² For confirmed cases, in which victims were hospitalized, the fatality rate was 64.3 percent.¹⁰³ These fatality rates among confirmed cases were consistent across the three hardest hit countries—Guinea, Liberia, and Sierra Leone—but higher than in Nigeria, which had a fatality rate of 45.5 percent. According to the study, EVD patients between the ages of 15 and 44 had higher survival rates than those older or younger.¹⁰⁴

Calculations for EVD mortality rates have been imperfect in part because of unrecorded cases. Cases are missed because patients do not seek care or have died at home without being reported.¹⁰⁵ Also, uncounted in reported EVD mortality rates are those individuals who died of other ailments as a result of a lack of medical care, which had been diverted to EVD treatment or had ceased entirely because of the EVD outbreak.¹⁰⁶

In the history of EVD outbreaks, the highest mortality rate occurred in the DRC outbreak of 2002–2003, in which 89 percent of those infected with EVD died of the disease. The lowest mortality rate in an EVD outbreak occurred during the 2007–2008 Ugandan outbreak, in which 25 percent of EVD-infected patients died of the disease.¹⁰⁷

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“When the outbreak began, Liberia had only one doctor to treat nearly 100,000 people in a total population of 4.4 million people. Every infection or death of a doctor or nurse depletes response capacity significantly.”

– WHO¹¹¹

EFFECTS ON HEALTHCARE PROFESSIONALS

Limited initial familiarity with EVD and its symptoms put healthcare workers at particular risk as EVD-infected patients sought medical care and were treated.¹⁰⁸ PPE is not required for the treatment of the malaria illnesses typically seen in the countries of Guinea, Liberia, and Sierra Leone, and although healthcare workers caring for patients with Lassa fever need to follow precautions against blood, bodily fluid, and droplet transmission, Lassa fever is not as easily transmitted as EVD.¹⁰⁹ The PPE necessary to protect healthcare professionals was not immediately available. Further, healthcare professionals had no reason to suspect EVD in their ill patients until international health authorities announced an outbreak of the disease in late March 2014.¹¹⁰

Because of their close proximity to early EVD victims during the course of medical treatment, healthcare workers were among the first to contract EVD. In late June 2014, 51 healthcare providers had been infected with EVD, accounting for 8 percent of all EVD cases.¹¹² International health officials signaled alarm at the high levels of infection of among healthcare workers during this outbreak, something that had not been as prominent a feature of past EVD outbreaks.¹¹³

The deaths of healthcare workers have a compounded negative effect on affected communities. Beyond the loss of human life, they represent additional losses of knowledge and experience in an area where there was often already an existing shortage of medical professionals.¹¹⁴ Infections in the healthcare profession impacted the availability of care in several ways. First was the immediate impact among colleagues. As staff members became ill, entire facilities shut down.¹¹⁵ Nurses in Sierra Leone went on

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strike after their colleagues contracted EVD.¹¹⁶ Confidence in the effectiveness of established safety procedures diminished as more healthcare workers fell to the disease.¹¹⁷ These adverse perceptions of hospital procedures may have been unwarranted as many healthcare workers were also called upon to provide care in the community after hours and may have contracted the disease outside of medical facilities.¹¹⁸ Nevertheless, these perceptions, and the very real risks of EVD exposure, have reportedly served as a deterrent for additional volunteers to take on the challenge of identifying and caring for those with EVD.¹¹⁹



Ebola healthcare worker in PPE. (Photo by Dr. Heidi Soeters, CDC)

Disease transmission dynamics also reportedly had the effect of driving patients with other ailments away from primary healthcare facilities. In areas where mistrust of public institutions is high, EVD transmission at healthcare facilities had the potential to further undercut public trust.¹²¹ Further, as EVD causes symptoms that are shared by many other diseases common to West Africa, identifying which healthcare facility was treating an active EVD patient may not have been possible.

The issues associated with healthcare workers contracting EVD gained attention at the highest levels of government. On June 17, 2014, Liberian President Ellen Johnson-Sirleaf visited a local hospital “to show solidarity for staff and nurses there after the death of a staff [member] who contracted the Ebola virus.”¹²² The incidence of infections among healthcare workers was worrisome to everyone involved in the response: beyond the loss of the most

“The fear of Ebola is almost as dangerous as the virus itself.”

– Dr. William Fischer II,
MSF Volunteer in Guinea¹²⁰

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essential personnel for fighting EVD, the high fatality rate served as an ongoing reminder that the resources required to fight an EVD outbreak on this scale were not in place when the crisis began.¹²³ An acute reminder of the toll on healthcare workers was the fact that local healthcare workers were reportedly often treated in the same facilities where they worked and had contracted the virus.¹²⁴

International healthcare workers who became infected with EVD had a different experience. When an American missionary doctor and a nurse became ill with EVD in August 2014, both were initially treated with an experimental drug treatment and then transported to Emory University Hospital in the United States for further care.¹²⁵ Other international healthcare workers were also reportedly evacuated—Spain's EVD transmission was tied to its evacuation of a Spanish priest who had treated EVD patients in Sierra Leone.¹²⁶

In September 2014, the U.S. Government authorized DoD to construct a hospital for the express purpose of creating a treatment facility for healthcare workers who contracted EVD.¹²⁷ The availability of dedicated care for healthcare professionals provided assurance to those who were both at the greatest risk and the most crucial to stopping the progress of the outbreak that they would be cared for if they contracted EVD.¹²⁸

As of March 25, 2015, international health officials reported that 853 healthcare workers had been confirmed as having been infected with EVD in Guinea, Liberia, and Sierra Leone, with 494 fatalities.¹²⁹ The reported EVD fatality rate among healthcare professionals infected with the disease was 57.9 percent.¹³⁰

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Young Ebola survivor, after losing both parents to EVD. (Photo by Adam Parr, USAID)

EFFECTS ON YOUTH

The generation of individuals who experienced this EVD outbreak as children are likely to face long-term negative consequences. The aftermath of the outbreak will be felt for years to come as the children of Guinea, Liberia, and Sierra Leone struggle to overcome personal tragedy, setbacks in education, and health risks.

More than 16,000 West African children have reportedly lost a parent or primary caregiver to EVD, and many have lost both.¹³¹ In some instances, parents reportedly abandoned their families after a partner became ill with EVD out of fear of contracting the disease themselves or of the stigma of association with an EVD survivor.¹³² Child survivors of EVD have also been stigmatized, and there have

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been reports of children shunned by their relatives and communities as a result.¹³³

Children relatively untouched by EVD are still suffering the negative effects of the Ebola crisis. With the widespread closure of schools and significant economic losses to families, children who were in school before the outbreak may not return because their contributions will be needed to help their families survive economically, or in the case of families that have been touched by EVD, because a surviving parent cannot afford the school fees.¹³⁴ Even relatively well-off families have seen the negative educational effects as fears of EVD transmission have reportedly kept some from using tutors to address gaps left by closed schools.¹³⁵

Fragile healthcare systems overwhelmed by the magnitude of the EVD outbreak had difficulty performing other basic health functions like providing vaccinations and treating routine illnesses that affect children in West Africa. According to media reports, measles vaccination rates in Liberia fell from 71 percent in May 2014 to 55 percent in October 2014.¹³⁶ Measles is one of many childhood diseases that are prevented by the vaccine programs disrupted by the EVD crisis.¹³⁷ A March 2015 study projected that without aggressive vaccination programs against measles in Guinea, Liberia, and Sierra Leone, an additional 2,000 to 16,000 West African children might die of measles during the next 18 months.¹³⁸

TRAVEL AND EVD

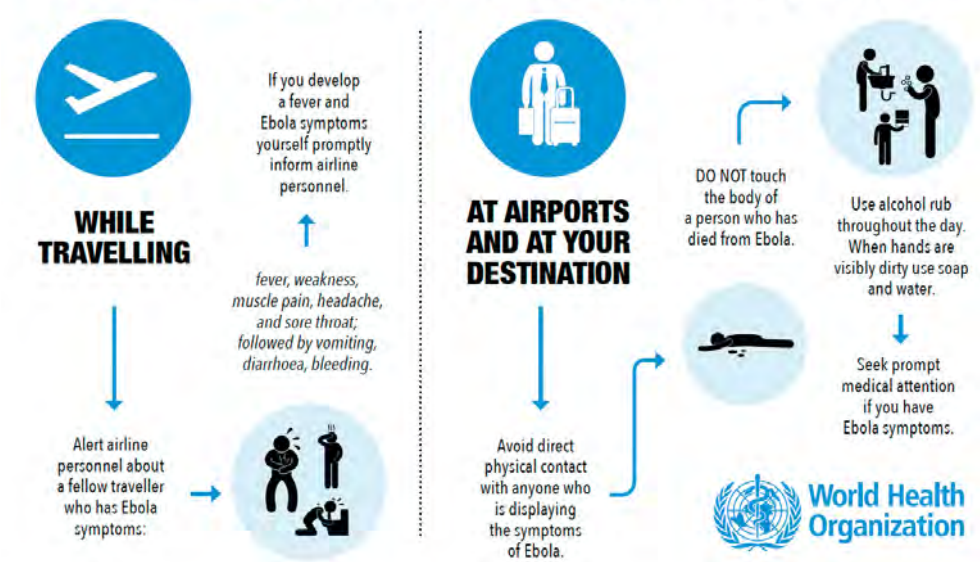
To curb the spread of EVD from high infection and transmission rate countries, the international community and governments of these and other countries instituted travel restrictions such as border

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closings, strict screening practices, and, in some cases, complete travel bans.

In Guinea, Liberia, and Sierra Leone, EVD severely disrupted travel and cross-border activity. Travel within these countries was reduced dramatically because of several factors, including the fear of EVD and travel bans instituted by local and international authorities.¹³⁹ At different points, the governments of all three countries closed their borders, instituted curfews, and, in certain instances, banned public celebrations.¹⁴⁰ In addition, the fear of contracting EVD has stunted interstate travel and public transportation, contributing to rising food prices and economic reversals in the larger West African economy.¹⁴¹ Informal and cross-border trade, which represents a significant portion of West African country Gross Domestic Products (GDPs), according to the World Bank, declined dramatically due to constraints on travel

TRAVEL TO AND FROM EBOLA-AFFECTED COUNTRIES IS LOW-RISK HERE IS WHAT YOU NEED TO KNOW



WHO poster describing the risk of traveling to and from EVD-affected countries. (WHO)

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imposed by the Guinea, Liberia, and Sierra Leone governments and neighboring country border closings.¹⁴²

In addition to local transportation, international travel has been affected by the EVD outbreak in West Africa. For the first time since the discovery of EVD, during this epidemic those infected with the disease travelled by air, introducing EVD to other populations.¹⁴³ In an attempt to reduce the likelihood of future accidental introductions of EVD to new populations, many airlines and governments either banned travel to and from countries with large numbers of EVD cases or instituted restrictions and strict screening processes.¹⁴⁴ Airlines suspended flights and many countries closed borders and canceled visa privileges for travelers from Guinea, Liberia, and Sierra Leone.¹⁴⁵ By September 2014, more than 15 African nations instituted travel restrictions or closed their borders to travel from the three countries with the highest numbers of infected persons. Some nations, such as Australia, stopped accepting refugees from West Africa and imposed strict screening measures on anyone traveling from the area, including a 3-week quarantine process.¹⁴⁶

While authorities that banned or heavily restricted travel to and from Guinea, Liberia, and Sierra Leone have asserted that they did so with the goal of protecting their populations from EVD, WHO and other health and safety organizations have asserted that such travel bans and restrictions only further delay the resolution of the EVD outbreak in West Africa. In particular, these officials state that such measures can engender “a false sense of security” and fear that the flow of materials and people needed to fight the disease will be severely stunted by such restrictions which cannot completely prevent the spread of EVD.¹⁴⁷

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Other nations, especially those with heavily used transportation centers such as the United Kingdom and United States, instituted strict screening and monitoring processes to stem the transmission of EVD, rather than imposing outright bans.¹⁴⁸ In the United States, authorities imposed restrictions on how and where individuals from Guinea, Liberia, and Sierra Leone could enter the country. Limited to entry at five airports, including Dulles International Airport in Virginia and the John F. Kennedy Airport in New York, travelers from the three countries undergo a series of screening and monitoring processes, including medical screenings and observation by government health officials for a 21-day period. Incoming travelers from these countries are also given medical equipment to help them monitor their health.¹⁴⁹ Some States with U.S. Government-designated entry points, including New York and Illinois, instituted more stringent policies. In these States, officials required that all individuals, even health workers, traveling from Guinea, Liberia, and Sierra Leone be quarantined upon arrival, regardless of whether or not they had exhibited EVD symptoms.¹⁵⁰

ECONOMIC IMPACT

While Guinea, Liberia, and Sierra Leone all suffered economic consequences from the EVD epidemic, definitive figures for the total economic cost of the West African EVD outbreak do not currently exist.

The adverse economic effects of the outbreak may be felt particularly acutely by the populations in these countries in light of high preexisting poverty levels. Available income data for Guinea, Liberia, and Sierra Leone prior to the outbreak indicate that more than 7 in 10 people in each country lived on the equivalent of less

than \$2 per day.¹⁵¹ Each of these countries ranks in the bottom decile in the world in per capita income terms.¹⁵²

Initial indications of the economic effects of the outbreak pointed to significant reversals. In October 2014, the World Bank reported that if the epidemic continued in Guinea, Liberia, and Sierra Leone, and spread to neighboring nations, the financial impact could range from \$3.8 billion to \$32.6 billion over a 2-year period.¹⁵³ The crisis reached its peak at the start of the planting season and conditions surrounding the outbreak affected food supplies.¹⁵⁴ Road blocks and closed borders that helped contain the spread of EVD also hampered economic activity and limited trade between West Africa and the rest of the world.¹⁵⁵ In early December 2014, the World Bank reported that 2014 GDP growth estimates for affected countries had been revised sharply downward. Projections for 2014 economic growth rates had dropped by 3 to 7 percent across the three countries against pre-crisis estimates.¹⁵⁶

The World Bank has estimated total economic losses associated with the Ebola crisis of \$240 million for Liberia, \$535 million for Guinea, and \$1.4 billion for Sierra Leone.¹⁵⁷

By late January 2015, the World Bank projected less severe effects on the economies of Guinea, Liberia, and Sierra Leone.¹⁵⁸ Revised estimates placed the 2014 losses to the three countries' economies at a minimum of \$500 million.¹⁵⁹ However, the economic impact of EVD did not end in 2014. World Bank estimates for economic losses in 2015 due to EVD totaled \$1.6 billion for the three hardest-hit countries.¹⁶⁰ With such a large share of the population living at or below the poverty line, GDP losses of this size may have a pronounced negative effect on those who were struggling to make ends meet before the EVD outbreak.

These economic effects may not be distributed evenly across the three most severely affected nations. The most recent available projections for 2015 from the World Bank point to positive economic

growth for Liberia, little to no growth in Guinea, and a severe recession in Sierra Leone, reflecting a 20 percent decline in its GDP.¹⁶¹

RESPONSE

U.S. GOVERNMENT RESPONSE TO THE OUTBREAK

In early 2014, WHO began coordinating with local authorities and non-governmental organizations (NGOs) in Guinea and its neighboring countries of Sierra Leone and Liberia to prevent the spread of an unknown disease. After the identification of the disease as EVD, the WHO Regional Office for Africa declared an Ebola outbreak on March 23, 2014, reporting 49 total cases and 29 deaths as of that date.¹⁶² At the end of March, CDC deployed five people to Guinea to assist with the outbreak response.¹⁶³

Following the rapid spread of EVD in the region over the next 3 months, the international community initiated large-scale efforts to combat EVD. In July 2014, WHO released an Ebola Virus Disease Outbreak Response Plan, which identified objectives for stopping EVD, and on August 8, 2014, declared the EVD outbreak in West Africa an “international public health emergency.”¹⁶⁴ That month, the U.S. Ambassador to Liberia, the Chargé d’Affaires to Guinea, and the Chargé d’Affaires in Sierra Leone, declared the EVD outbreaks in their respective countries a disaster. The U.S. Ambassador to Liberia subsequently announced additional assistance efforts in West Africa including the deployment of a USAID-led Disaster Assistance Response Team (DART) to the region and \$5 million in funding for USAID programs for combating EVD.¹⁶⁵



Interior view of the infectious diseases ward at Donka Hospital, Conakry, Guinea. (Photo courtesy of Dr. Heidi Soeters, CDC)

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The WHO Response Plan provided estimates for resource requirements and outlined several objectives. These objectives included immediate action to support the three most affected countries of Guinea, Liberia, and Sierra Leone in strengthening early EVD detection, reporting and referral of suspected cases, and to increase preparedness in at-risk countries.¹⁶⁶ The plan called for establishing national response plans for each heavily affected country, strengthening neighboring-country readiness and response capacities, and garnering support and coordination from the international community.¹⁶⁷

To provide a framework for coordinating these efforts, WHO published the Ebola Response Roadmap in late August 2014, which outlined the roles and responsibilities of governments and organizations involved in the effort to combat EVD in West Africa.¹⁶⁸ The roadmap designated WHO as the lead organization in coordinating the overall health sector response to EVD, assisting governments in their plans to combat EVD, and managing on-the-ground activities in high infection and transmission rate areas.¹⁶⁹ The roadmap also set broader international objectives for achieving comprehensive geographic coverage of core response activities in the three primary countries facing the outbreak, initiating emergency interventions in countries with an initial case or isolated outbreak, and increasing preparedness to quickly detect and address EVD in all countries.¹⁷⁰

In response to the severity of the EVD outbreak and the objectives in the WHO Ebola Response Roadmap and national response plans, the international community took steps to bolster efforts to contain the EVD outbreak. On September 18, 2014, the UN Security Council called for assistance from nations across the world and declared the EVD outbreak in West Africa a “threat to

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international security and peace.”¹⁷¹ That same day, the UN established the UN Mission for Ebola Emergency Response (UNMEER) to improve coordination of response activities and address the socioeconomic problems caused by EVD in West Africa.¹⁷² Since the Security Council’s call to action in September 2014, the UN, U.S. Government, international health organizations, and international donors have worked in coordination to fight EVD in West Africa.¹⁷³ Many of the participating countries and organizations have expressed a desire to achieve aims similar to those set out by WHO and the Ebola Response Roadmap.¹⁷⁴ The U.S. Government took a lead role in the Ebola outbreak response in Liberia, while the United Kingdom and France assumed similar roles in Sierra Leone and Guinea, respectively.¹⁷⁵

In September 2014, the U.S. Government publicly identified key goals of controlling the epidemic in West Africa, mitigating the socioeconomic effects of the outbreak, coordinating efforts to combat EVD with the international community, and fortifying global health infrastructure, both at home and in West Africa.¹⁷⁶ With the subsequent declaration of Operation United Assistance, DoD was authorized to provide direct support to USAID-led response efforts.¹⁷⁷

The President announced the U.S. Government’s strategy for reducing EVD transmission in West Africa in September 2014.¹⁷⁸



Healthcare worker after a long day at an ETU. (Photo by Morgana Wingard for USAID, Bong County, Liberia, October 7, 2014)

RESPONSE

The strategy is organized around four pillars of activity:

1. Controlling the Outbreak
2. Mitigating Second Order Impacts of the Crisis
3. Building Coherent Leadership and Operations
4. Strengthening Global Health Security¹⁷⁹

As most of the U.S. Government's efforts during this reporting period were associated with Pillar 1 goals, this report focuses on those activities. Much of the U.S. Government's efforts under that pillar were focused on supporting:

- Command and control of health and humanitarian efforts
- Isolation and treatment capacity
- Human remains management
- Essential health services
- Public outreach and communications

Over time, the U.S. Government's focus has shifted to include other lines of effort and aims. For example, in February 2015, the White House announced that the U.S. Government response had shifted from efforts designed to turn the tide on the EVD epidemic to eliminating all cases of the disease from West Africa.¹⁸⁰ Future reports will address these shifts and other U.S. Government efforts to address second order effects, promote coherent leadership and operations, and strengthen global health security.

PROMOTING EFFECTIVE COMMAND AND CONTROL OF HEALTH AND HUMANITARIAN EFFORTS

The international community's efforts to combat the EVD outbreak in West Africa have included the establishment of effective nationally led incident management and coordination as a key supporting element. At the start of the outbreak, coordination and response planning were weak and incident management structures lacked sufficient resources. To achieve effective incident management and coordination, the WHO Response Plan identified the creation of national and sub-national emergency operations centers (EOCs) and building of in-country capacity for a nationally-led incident management system (IMS) as priorities.¹⁸¹

Operations centers, such as those employed by CDC and USAID, support response efforts through the application of an incident command system (ICS) model.¹⁸² ICS is a model designed to provide effective and efficient incident management by integrating facilities, equipment, personnel, procedures, and communications command efforts within a common organizational structure.

Interim National EOCs were initially set up in Liberia, Sierra Leone, Guinea, and Mali to establish national emergency management programs to address the immediate needs of the EVD response effort.¹⁸³ In Liberia, USAID collaborated with CDC to establish the national EOC; in Sierra Leone, CDC supported the national EOC; and in Guinea, CDC provided technical assistance and USAID provided funds for prefectural EOCs.¹⁸⁴ By the end of March 2015, some progress had been made towards establishing functional, permanent emergency management programs.¹⁸⁵

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- In Liberia, a permanent National EOC was under construction. One EOC and IMS had been established at the sub-national level in Montserrado and 15 county-level EOCs were reportedly ready for activation, while work on another county-level facility was underway.
- In Sierra Leone, a permanent National EOC was under construction and district-level Ebola Response Centers had been established throughout the country.
- In Guinea, plans had been developed to renovate the existing EOC facility to support future needs, and prefecture-level EOCs with different operational capabilities had been established in 20 priority prefectures in Guinea.¹⁸⁶

Much of the U.S. Government's work to promote domestic IMS capacity focused on Liberia, which faced some difficulties in this area at the outset. Effective IMS systems provide a common operating picture to key decision-makers; communications interoperability; standardized resource management procedures for coordination among different jurisdictions and organizations; and shared sets of doctrine, concepts, principles, terminology, and organizational processes for all hazards.¹⁸⁷ As part of its initial response, the Liberian Ministry of Health and Social Welfare (MOHSW) developed a national task force and technical expert committee to oversee management of Ebola-related activities. This national response system incorporated several IMS components in its implementation. The Government of Liberia designated MOHSW's deputy health minister and chief medical officer as the national coordinator for the Ebola response. The response structure included technical committees that addressed social messaging, epidemiology and surveillance, social and mental

health support, case management, contact tracing, and laboratory resources.¹⁸⁸

CDC identified a few problems with this initial IMS implementation. First, the national coordinator, with significant non-Ebola related public health responsibilities as the country's chief medical officer, did not have a deputy to fill-in when he was unavailable. The national coordinator was stretched because of the dual responsibilities for overseeing response efforts and for directly assisting in case management and mortuary and ambulance transport coordination in the counties around Monrovia. Second, CDC noted that the size of national task force meetings—which included representatives from other ministries, NGOs, and international groups—made communications and management difficult. Finally, CDC observed that MOHSW's task force did not have the administrative or logistical support needed to follow up on questions and help the group advance information gathering or response efforts.¹⁸⁹

In late July 2014, CDC deployed epidemiologists, data management, emergency management, and health communications personnel to assist MOHSW in responding to the Ebola outbreak, and aided in the implementation of IMS concepts. As the response progressed, CDC continued to provide technical assistance and consultation to the Government of Liberia in support of MOHSW efforts to refine its IMS implementation.¹⁹⁰ CDC reported that, over time, MOHSW (1) developed plans for refining the command and control structure, (2) staffed the IMS with more support capacity, (3) identified ways to better link the IMS with county-level response and external partners, and (4) improved IMS meetings by focusing on actionable and accountable response objectives.¹⁹¹

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Several USAID contracts also supported nationally-led incident management efforts. USAID awarded a contract to the International Rescue Committee in September 2014 to provide Montserrado County, Liberia, with logistical and organizational support. USAID awarded a contract to the World Food Programme (WFP) in January 2015 for humanitarian coordination and information management, logistics support, and relief commodities in Liberia, Sierra Leone, and Guinea.¹⁹²

PROVIDING ADEQUATE ISOLATION AND TREATMENT CAPACITY

U.S. Government efforts to promote isolation and treatment capacity in EVD-affected countries included support for effective screening, contact tracing, and the establishment of Ebola Treatment Units (ETUs) and Community Care Centers (CCCs).

Effective screening for EVD is a key public health tool for preventing the spread of the disease. To advance this aim, CDC issued guidance for detecting EVD symptoms, trained healthcare workers, and developed guidelines to help healthcare workers avoid contracting and spreading the disease.¹⁹³ In Liberia, the focal point of much of the U.S. Government's effort, CDC and other agencies established procedures for screening possible EVD patients.¹⁹⁴ By the end of January 2015, the U.S. Government had trained more than 1,500 healthcare workers in Liberia, and USAID-supported partners trained thousands of healthcare workers in Sierra Leone and Guinea, including 2,200 healthcare workers in infection prevention and control practices in Guinea.¹⁹⁵ In addition, U.S. healthcare workers trained hundreds of local healthcare workers to screen individuals for potential EVD signs and symptoms.¹⁹⁶ In Tubmanburg, Liberia, for example, DoD built an ETU which is

now run by the International Organization for Migration. From the ETU, outreach teams consisting of locally trained healthcare workers were set up at county checkpoints and equipped with thermometers, disinfectant spray cans, and ambulances to screen the local populace for EVD symptoms.¹⁹⁷ The U.S. Government, through USAID, also delivered medical equipment, including PPE and infrared thermometers, to boost screening efforts.¹⁹⁸ DoD procured and provided 1.4 million sets of PPE to the Monrovia Ebola Training Center, the Monrovia Medical Unit (MMU), the 10 DoD-sponsored ETUs, and Mobile Ebola Training Teams.¹⁹⁹

CDC EBOLA GUIDANCE
Evaluating Level of Risk

HIGH RISK

- Direct contact with blood or body fluids from a person showing symptoms of Ebola while not wearing personal protective equipment (PPE).
- Living with and caring for a person showing symptoms of Ebola.
- Direct contact with a dead body while in a country with a large Ebola outbreak or a small outbreak that may be hard to control without wearing PPE.
- Direct contact with blood or body fluids from a person showing symptoms of Ebola through splashes to eyes, nose, or mouth, through a break in the skin, or through a needle stick.
- Processing blood or body fluids from a person showing symptoms of Ebola without wearing PPE or undertaking standard biosafety precautions.

SOME RISK

- Close contact (within 3 feet) for a long time with a person showing symptoms of Ebola while not wearing PPE.
- Direct contact while in a country with a large Ebola outbreak or a small outbreak that may be hard to control with a person showing symptoms of Ebola while wearing appropriate PPE.

LOW RISK

- Having been in a country with a large Ebola outbreak or a small outbreak that may be hard to control within the past 21 days with no known exposures.
- Brief direct contact, such as shaking hands, with a person who has Ebola while not wearing PPE.
- Being in the same room for a short amount of time with a person showing symptoms of Ebola.
- Direct contact with a person showing symptoms of Ebola in a country **without** a large Ebola outbreak or a small outbreak that may be hard to control while wearing appropriate PPE.
- Having traveled on an airplane with a person showing symptoms of Ebola.

NO RISK

- Contact with a person with Ebola before their symptoms began.
- Having left a country with a large Ebola outbreak or small outbreak that may be hard to control more than 21 days ago.
- Having been in a country **without** a large Ebola outbreak or small outbreak that may be hard to control.
- Contact with a healthy person who had contact with someone showing symptoms of Ebola.
- Having been on an aircraft or ship and did not leave the plane or ship or the area close by while in a country with a large Ebola outbreak or a small outbreak that may be hard to control.

cdc.gov/ebola January 7, 2015 CS252940

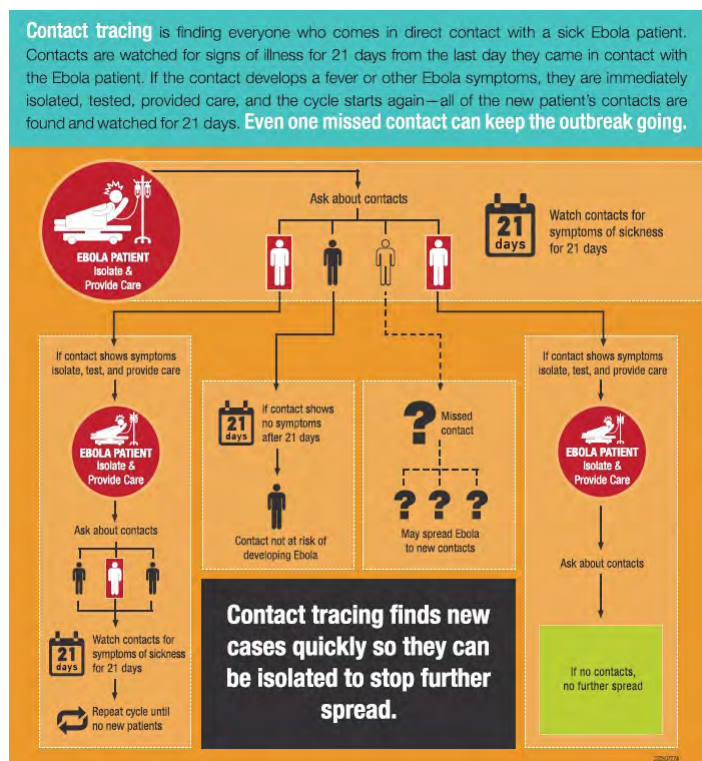
CDC Ebola Guidance: Evaluating Level of Risk Infographic. (CDC)

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In addition to promoting effective screening in West Africa, countries around the world instituted screening measures for individuals arriving from Guinea, Liberia, and Sierra Leone.²⁰⁰ Countries like France, Belgium, the United Kingdom, and Israel reportedly instituted strict screening measures at airports and other points of entry.²⁰¹ Steps such as requiring travelers to report all travel and potential contact with sick individuals, performing medical checks, and mandating that airlines immediately report sick passengers with EVD-like symptoms are some of the procedures that have been employed around the world.²⁰² In the United States, authorities imposed restrictions on how and where individuals travelling from

Guinea, Liberia, and Sierra Leone could enter the country and established screening and monitoring measures for these individuals.²⁰³ As of March 2015, screening and monitoring practices instituted by the U.S. Government in West Africa and at home remained in place.²⁰⁴

Because the Ebola virus spreads through close personal contact, the application of contact tracing techniques has been another tool in the effort to contain EVD transmission. Contact tracing allows the healthcare community to identify and isolate individuals at risk of contracting EVD due to contact with a known individual with the disease.²⁰⁵ The contact tracing process frequently begins with questionnaires and interviews of family members. These, in turn, may provide leads to churches, community events, or frequently visited establishments where an EVD victim may have had close contact with other



CDC Contact Tracing Infographic. (CDC)

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individuals. By following those leads, healthcare workers can raise awareness of the danger of infection, recommend isolation and observation of potential victims for the 21-day incubation period, and if EVD symptoms arise, begin treatment and isolation of the patient early.²⁰⁶ The resulting early identification, treatment, and isolation limit follow-on infections and increase the chance of survival for the ill.²⁰⁷

Where EVD is confined to small, rural villages, contact tracing can be fairly straight forward.²⁰⁸ Members of small, rural communities may know each other well, and, in these settings, individuals belonging to the same family unit are easily identified and the travel activities of an individual are often known to many. In urban settings, contact tracing is more difficult, requiring greater manpower and resources to carry out effectively. Given the scope of the outbreak, contact tracing has been both critical and resource-intensive.²⁰⁹

To support efforts to provide contact tracing in the impacted countries, the U.S. Government has funded these activities through international partners. It has also provided training to local healthcare workers on how to effectively implement contact tracing programs.²¹⁰ In Guinea, USAID supported social mobilization and improved contact tracing through U.S.-based implementing partner Plan



Instruction on EVD treatment protocols, Guinea. (Photo courtesy of Dr. Heidi Soeters, CDC)

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International.²¹¹ USAID also provided support for contact tracing and healthcare workers in partnership with implementer Global Communities. Between August and October 2014, this latter effort reportedly reached more than 2,700 individuals in more than 600 communities in Liberia.²¹²

HOSPITAL FOR INFECTED HEALTHCARE WORKERS

To encourage experienced healthcare workers from around the world to join in the effort to combat EVD and help ensure they receive care should they become ill, DoD constructed an Ebola treatment facility in Monrovia, the MMU. The facility opened its doors in early November and was managed by HHS' U.S. Public Health Service (USPHS) Commissioned Corps. On November 24, 2014, the medical unit achieved a milestone by releasing its first two patients, both of whom are now Ebola-free.²¹⁸ As of April 2015, more than 70 USPHS representatives had treated 42 patients at the facility, 18 of whom had tested positive for Ebola.²¹⁹

As EVD cases drop across West Africa and the international community seeks to end the outbreak, contact tracing becomes increasingly important but gaps in the contact tracing process still remained in February.²¹³ In late February 2015, cases appeared in Guinea and Sierra Leone outside of known transmission chains.²¹⁴ In addition, reports suggested that fears concerning healthcare workers and treatment facilities still persisted among local populations, leading some individuals to not seek care.²¹⁵ In the face of these challenges, USAID, CDC, and other U.S. and international agencies continue to work with implementing partners to conduct contact tracing and introduce more rigorous tracing techniques as new cases occur.²¹⁶ By the end of the March 2015, 13 U.S. Government partners were conducting contact tracing in Liberia, 4 in Guinea, and 2 in Sierra Leone.²¹⁷

To enable the rapid identification of EVD, the U.S. Government opened laboratory testing facilities in the region. The resulting increased diagnostic capacity reportedly reduced the time to diagnosis from days to hours, thereby advancing care of infected patients and minimizing the exposure of patients without EVD to those with the illness.²²⁰ DoD provided seven mobile laboratories to the affected countries where more than 4,000 samples were reportedly tested since September 2014.²²¹ CDC also provided support to laboratories in Liberia and Sierra Leone, and the CDC-staffed laboratory in Bo, Sierra Leone alone tested more than 10,000 samples.²²² Scientists associated with the National Institute

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of Allergy and Infectious Diseases (NIAID) also provided diagnostic support at facilities in Liberia.²²³ As of the writing of this report, there were eight operational laboratories in Guinea and four in Liberia.²²⁴

The establishment and operation of ETUs and CCCs were also early elements of the Ebola Response Roadmap. According to WHO, ETUs and CCCs are essential to isolating victims and stopping the spread of the disease.²²⁵ The weak health infrastructure in the three most affected West Africa nations, especially in rural areas, drove health organizations to advocate for increasing the geographic coverage and construction of treatment facilities.²²⁶ WHO, UNMEER, and other organizations led the overall effort to mobilize, support, and train international experts to build and staff ETUs and isolation wards such as CCCs.²²⁷

The United States has made significant contributions to the construction of ETUs in West Africa. Working through partner organizations, the U.S. embarked on a mission that originally targeted support for the construction of 27 ETUs in Liberia, while the British worked to execute a similar plan in neighboring Sierra Leone.²²⁸ Under USAID guidance, DoD built and established the first American-built ETU in November 2014 in conjunction with the Liberian Armed Forces.²²⁹

As the scope of the EVD outbreak grew in Guinea, Liberia, and Sierra Leone, the spread of the virus overwhelmed existing isolation and treatment facilities, leaving many victims to be cared for by



US Navy mobile EVD testing facility. (Photo by Morgana Wingard for USAID, October 7, 2014)

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family members who were at risk to EVD exposure.²³⁰ In an effort to prevent such situations and reduce transmission, the U.S. Government, UN, and other organizations worked to build CCCs.²³¹ These centers were designed to isolate new EVD cases from larger communities and thereby prevent further EVD transmission. In Liberia, USAID funded the construction of 17 CCCs while CDC worked in conjunction with WHO and local officials to open CCCs.²³² By February 2015, there were approximately 50 CCCs in Guinea, Liberia, and Sierra Leone, enabling communities to respond more rapidly to cases and provide preliminary care to EVD patients.²³³

Since the completion of the first U.S.-built ETU in Tubmanburg, the U.S. Government has constructed 14 more ETUs in the region.²³⁴ Although initial plans called for the U.S. Government to aid in the establishment of 27 ETUs, the reduction of EVD cases in Liberia reduced the need for further units. These ETUs have isolated hundreds of patients and treated the sick, thereby helping stem the spread of EVD.²³⁵

Because of the recent drop in the number of new EVD cases across the region, particularly in Liberia, certain EVD treatment facilities may no longer be needed. As of this writing, the last confirmed Ebola patient in Liberia had died on March 27, 2015.²³⁶ Earlier that month, government representatives from Guinea, Liberia, and Sierra Leone and advisors from USAID met in Freetown, Sierra Leone to discuss developing guidance for decommissioning EVD care facilities in West Africa.²³⁷

USAID reported that, as of March 27, 2015, there were 42 operational ETUs constructed by the international community in

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West Africa: 15 operational ETUs in Liberia, 19 in Sierra Leone, and 8 in Guinea. Each of these countries reported that it had adequate bed capacity for new and current cases, a key element to isolating patients and breaking contact chains.²³⁸

Aggressive contact tracing, rapid identification of EVD, and prompt isolation of EVD patients have been important aspects of the strategy to halt the EVD epidemic as they helped prevent further transmission. Because of the success of these and other efforts to combat the outbreak, some ETUs and CCCs have seen few patients and plans for more of these facilities have been scaled back. Future efforts will focus on how these facilities can be used to advance other public health needs.

ASSISTING IN HUMAN REMAINS MANAGEMENT

A critical area of international assistance has been helping West Africa bury its dead. In addition to widely reported risks posed by traditional mourning rituals, there are logistical and socioeconomic challenges associated with EVD fatalities.²³⁹ Any handling of the remains of an EVD victim poses a risk to the living, whether it is a family member preparing a body for burial, a burial team strained by the volume of corpses, or a mortuary.²⁴⁰ Medical systems and facilities were initially overwhelmed by the isolation and care requirements of EVD patients, and governments struggled to



Burial team members complete a safe burial. (Photo by Neil Brandvold, USAID, Margibi County, Liberia, January 29, 2015)

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keep up with the demands of the EVD epidemic.²⁴¹ Meanwhile, the practical requirement to dispose of bodies was unavoidable. With more than 10,000 EVD fatalities, dealing with the dead has presented both a social and a logistical issue.

The international plan to address the issues around safely burying those who died from EVD relied on two main activities: (1) educating the affected population on the risks associated with traditional burial practices, and (2) ensuring that burial teams were available wherever there were EVD fatalities and that they were protected through the provision of training and proper equipment.²⁴²

Initially, the message surrounding burial practices and the training provided to burial teams focused solely on the technical aspects of containing the virus.²⁴³ With experience, it became clear to the international response effort that the clinical approach failed to take into account emotional and spiritual needs. On October 1, 2014, CDC released a standard operating procedure emphasizing social and cultural sensitivity to further the acceptance of safe burial practices.²⁴⁴

Clad in PPE, volunteer burial teams retrieve the bodies of EVD victims and work to safely remove them from their communities. Burial teams are comprised of several individuals equipped with PPE and chlorine solution, which is used to spray down the area surrounding the deceased body.²⁴⁵ The 1998 WHO manual for conducting safe burials instructs that bodies be sprayed with disinfectant, wrapped in body bags or, if body bags are unavailable, cotton blankets, and soaked again with a chlorine solution.²⁴⁶ Bodies are then transported to the burial site, where they are buried 6 feet deep, and the next 4 feet of earth is soaked in chlorine bleach.²⁴⁷ The vehicle used to transport the bodies is disinfected

after burial.²⁴⁸ U.S. Government support is being provided to the International Federation of the Red Cross and Red Crescent (IFRC) to educate the community at large in an effort to create understanding and acceptance of the need for safe burial practices, all the while adopting practices to respect the grieving community.²⁴⁹

As of early December 2014, the U.S. Government had met its target of supporting 65 safe burial teams in Liberia, reportedly bringing the response time to an EVD death to 24 hours or less for more than 90 percent of the alerts. This represented an increase of 53 safe burial teams in just 4 months.²⁵⁰

By mid-February 2015, the U.S. Government reported that it had supported more than 190 burial teams distributed across Guinea, Liberia, and Sierra Leone.²⁵¹ By the end of March 2015, 95 percent of burial teams in the three countries were reportedly responding to calls within 24 hours and no unsafe burials had been reported in Liberia and Sierra Leone over the previous week.²⁵²

DEALING WITH DEATH

Mortuary traditions and practices in West Africa reflect a mix of religious beliefs and cultural norms. With both Christian and Islamic religious influences prevalent in the area, the public health community was faced with a complex mix of grief, tradition, belief, and logistics when it came to one of the key features of containing the EVD outbreak: safe handling of the deceased. Initial approaches that focused simply on the public health aspects of handling EVD fatalities met with community resistance.²⁵³

In some communities in West Africa, it is reportedly the custom for the deceased's body to be washed by a family member.²⁵⁴

No matter the religious tradition, death is a community event where friends, neighbors, colleagues, and members of a body of worship all gather to say goodbye to the deceased. Funerals can be widely attended and funeral attendants may touch the deceased as part of the grieving process.²⁵⁵

As the EVD crisis evolved, so did public health approaches to safe burials, with some notable successes and some unintended consequences. The blanket cremation policy that Liberia implemented from August through December 2014 helped rapidly address the large number of fatalities, and according to media reports, also introduced a new mortuary practice to the country.²⁵⁶ However, it reportedly discouraged some people from seeking treatment, as cremation was not culturally accepted by many and did not fit into the established mortuary culture predating the EVD outbreak.²⁵⁷ EVD victims and their families did not want the deceased to be handled in a way that was seen as disrespectful or inconsistent with their religious beliefs.

As burial teams gained more experience in dealing with grieving family members, those teams that integrated tradition and transparency, and respected family members and their wishes in burial activities, reportedly earned broader acceptance within the communities they served.²⁵⁸ In November 2014, WHO adjusted its protocol for providing EVD burials to add practices that included the families of the deceased and made allowances for deeply-held religious traditions to be carried out in a modified fashion.²⁵⁹

Interrupting EVD transmission by assisting with safe and culturally sensitive burial practices is an important step that can be taken to help avoid EVD transmission to close family members.

Responding agencies and the international community continue to modify their approaches to supporting these practices by working with community and religious leaders to provide culturally acceptable practices that may vary from location to location and between urban and rural areas.²⁶⁰

RESTORING ESSENTIAL HEALTH SERVICES

The U.S. Government effort to restore safety and functionality to West Africa's healthcare system has been implemented through the distribution of medical supplies and the provision of healthcare workers to medical institutions in areas with high infection rates.

The delivery of equipment such as PPE and assistance in the form of trained infection control practitioners aimed to interrupt the spread of EVD and augment local healthcare response and care capacities.

At the outset of the outbreak, much-needed medical equipment and supplies were reportedly either insufficient or lacking altogether.²⁶¹

While WHO and other organizations attempted to deliver medical supplies as rapidly as possible, the swift spread of the disease outpaced PPE producers, and the transportation and logistical challenges of operating in West Africa prevented PPE supplies from reaching the areas where they were needed most.²⁶²

MOBILITY, INFRASTRUCTURE, AND EVD

Mobility and transportation can play a role in both the spread and containment of EVD. In previous outbreaks, travel limitations to villages helped to constrain the spread of the

disease; effectively quarantining populations with high rates of infection.²⁶³ However in the current EVD outbreak, the illness reached more connected communities and those afflicted with the disease accessed transportation systems to carry the illness to other communities. Once EVD reached large population centers, transportation and associated mobility greatly complicated containment efforts as the impacted population traveled widely across porous borders and between rural areas and urban centers, thereby opening up new lines of EVD transmission.

While mobility has served to spread EVD across an unprecedented geographical reach during this outbreak, the the region's infrastructure has not always easily supported a correspondingly broad response. Many affected communities are remote and not easily accessible by vehicles bearing medical teams and equipment. This has delayed patient treatment, the transportation of samples to laboratories, and calls for help or alerts.²⁶⁴

Following calls for international action by WHO and others in September 2014, the UN created UNMEER, which was tasked with facilitating logistics for delivering staff and materials to West Africa, including immediately needed vehicles and medical supplies to treat rural communities with EVD cases.²⁶⁵ By mid-October, UNMEER was supporting partners to expedite the delivery of aid to West Africa by using the UN humanitarian air corridor and acting as a liaison between UN agencies and donor nations and groups.²⁶⁶

Meanwhile, the U.S. Government began providing supplies and

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assisting UN agencies and NGOs with funding and logistics. USAID has made major contributions of medical equipment to West Africa, including the provision of more than 400 tons of PPE, infrared thermometers, chlorine, and plastic sheeting.²⁶⁷ USAID has also funded public international organizations and NGOs to provide needed supplies and programs. USAID supported the movement of personnel and equipment to remote locations within Guinea, Liberia, and Sierra Leone and provided medical equipment and supplies through WFP's UN Humanitarian Air Service.²⁶⁸ USAID has also funded WHO efforts to provide technical experts and more than 100,000 sets of PPE to frontline healthcare workers, and has worked with the United Nations Children's Fund (UNICEF) to facilitate the procurement of 50,000 home-based EVD treatment and protection kits delivered in Liberia including training on how to use the equipment properly.²⁶⁹

USAID is also working through UNICEF in Guinea, Liberia, and Sierra Leone to provide supplies (hygiene kits, soap, bleach, gloves, and masks), transportation, and training to the healthcare community and general public.²⁷⁰ In addition, CDC has deployed nearly 1,000 U.S. civil servants to West Africa, supported laboratory development in Liberia and Sierra Leone, and funded activities such as contact tracing, emergency center development, and community outreach programs.²⁷¹ As a result of these and other efforts, the White House reported that in February 2015, there were sufficient emergency centers, laboratories with testing capabilities, and rapid response infrastructures in all three EVD-affected countries.²⁷²

Before the current EVD outbreak, West African healthcare systems had no direct experience with an EVD outbreak and faced significant resource constraints.²⁷³ Healthcare workers were greatly



Decontamination station in an Ebola isolation ward in Lagos, Nigeria. (Photo courtesy of CDC Global)

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Guinea hand-washing training. (Photo courtesy of Lindsey Horton, CDC)

affected by EVD infections and deaths, and many were afraid of EVD and reportedly stopped working as a precautionary measure.²⁷⁴

According to the Ebola Response Roadmap, activating and sustaining an appropriate workforce was a critical element to the international response to EVD. While training and equipping healthcare workers was a priority, compensating healthcare workers was a major concern.²⁷⁵ The roadmap notes that remuneration packages—including salaries, hazard pay, and insurance—should be available to healthcare workers and that,

if necessary, UN and partner agencies assist national governments in supporting such packages.²⁷⁶ In October 2014, the media reported that issues concerning healthcare worker pay caused complications in the response effort as healthcare workers in Liberia and Sierra Leone threatened to strike over insufficient hazard pay.²⁷⁷ In response, the UN reportedly announced that it would work with West African governments to ensure healthcare workers combating EVD received regular compensation.²⁷⁸ The U.S. Government has assisted in this effort. In September 2014, USAID designated \$5 million of the \$75 million in development assistance funds it provided to the Government of Liberia for use in funding the salaries of 3,000 Liberian healthcare workers for 6 months.²⁷⁹ As of March 31, 2015, USAID had delivered development funds to pay local healthcare workers through Liberia's MOHSW.²⁸⁰

The U.S. Government also responded with training support to

reinforce knowledge of EVD containment practices within the healthcare community. Through implementing partner John Snow International, USAID has provided infection control training for non-ETU healthcare workers and PPE and supplies to health facilities in Liberia. DoD trained more than 1,500 healthcare workers in Liberia, and converted a portion of the National Police Training Center in Paynesville, Liberia into an Ebola healthcare worker training center.²⁸¹

In addition to working to update PPE guidelines and standards, the U.S. Government sought to promote advances in PPE design. In September 2014, USAID announced a development

PPE AND INNOVATIONS STEMMING FROM THE OUTBREAK

Effective PPE use is one of many preventive measures health workers apply when treating highly infectious diseases like EVD. Certain augmentations were made to PPE and PPE guidelines in response to the challenges arising from the EVD outbreak.²⁸²

PPE for medical personnel providing EVD treatment typically include a medical gown or suit, gloves, and a facemask and cover.²⁸³ WHO and CDC urge that PPE be used in conjunction with organizational practices and manufacturing regulations, such as separate and secure facilities, strict sanitation measures, and proper ventilation.²⁸⁴

In response to PPE challenges that arose in the EVD outbreak in West Africa, WHO's Guideline Development Group, which includes U.S. Government representatives, developed and issued updated guidelines for PPE use in October 2014.²⁸⁵ In drafting the updated guidelines, the group considered many factors in developing specifications to prevent EVD

transmission, such as the full range and most common modes of transmission, and the viral loads of different bodily fluids.²⁸⁶ To mitigate risks in these and other areas, the updated guidelines call for mandatory training concerning the application, removal, and decontamination of PPE.²⁸⁷

The updated guidelines are intended to balance worker safety with patient treatment needs.²⁸⁸ This included increasing agility and comfort while reducing heat levels in suits and recommending additional gear and measures. In particular, the guidelines emphasize the use of disposable gowns and coveralls, fluid resistant respirators, double layered gloves, protective footwear, and head covers or hoods, among other elements. They stress that head covers are the most important element of PPE as they protect the mouth, nose, and eyes.²⁸⁹

grand challenge to stimulate public and private innovation in the fight against Ebola. Under the grand challenge, USAID sought partnerships to create, design, and test improvements to approaches and equipment to combat, treat, and respond to EVD.²⁹⁰ Out of the more than 1,500 submissions it received, USAID selected 15 innovations to assist in efforts to combat EVD, including improvements to PPE.²⁹¹ USAID has reported that subsequent collaborations with organizations like International Personal Protection in partnership with Cornell University and Johns Hopkins University will lead to advancements in PPE functionality and adaptability. According to USAID, these efforts support the design, development, and testing of protective suits that are easier to don and remove and also provide more breathability without compromising a leak-free barrier.²⁹² A collaboration between USAID, CDC, and DoD will ensure that these PPE improvements

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are tested using the latest protocols for production and field deployment.²⁹³

Prior to the outbreak, medical expertise and infrastructure in the three most affected nations of Guinea, Liberia, and Sierra Leone were severely lacking.²⁹⁴ Years of civil war and disruption limited opportunities for formal education and reduced local workforce capacity to address health challenges of this kind.²⁹⁵ At the beginning of the outbreak, WHO estimated that there were only 1 or 2 doctors per 100,000 people in the three countries, and approximately 50 doctors in Liberia as a whole.²⁹⁶



After being used inside an EVD ward, all boots are disinfected with a chlorine solution. (Photo by Morgana Wingard for USAID, Bong County, Liberia, October 7, 2014)

When EVD spread, health institutions in these countries were overwhelmed and the overall health infrastructure quickly deteriorated.²⁹⁷ To address this situation, the international community embarked on efforts to improve medical response capacities and deploy and train a healthcare workforce capable of properly handling the outbreak.²⁹⁸ WHO has reported that deploying healthcare workers capable of properly executing infection prevention and control measures such as PPE use, following medical protocols for triage and isolation in ETUs, and other practices for treating EVD, were critical to stopping the spread of the disease.²⁹⁹

In December 2014, CDC issued guidelines on treatment of EVD exposed persons. In introducing the guidelines, CDC highlighted

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the dangers of treating EVD patients in health facilities that lack infection control measures and proper health infrastructure. In these facilities, transmission can often occur due to breach of PPE, poor sanitation techniques, and unknown exposures in patient triage areas.³⁰⁰ In response, CDC provided a 3-day experiential training course for more than 600 healthcare workers as part of its effort to improve proper EVD response capacities in West Africa. The course provided instruction on several topics including how to implement infection control in ETUs, provide basic clinical care and patient management, and apply intervention strategies for isolating potential cases. While the course is no longer available, CDC has developed an online training toolkit that is available to healthcare workers preparing to work in ETUs in Africa.³⁰¹

During the fall of 2014, the U.S. Government expanded EVD response efforts in West Africa by training thousands of healthcare workers. DoD, for example, established a training center outside Monrovia to train healthcare workers in infection prevention and control procedures.³⁰² By the end of January 2015, the U.S. Government, through USAID and DoD, had trained more than 3,500 health workers in Sierra Leone and Liberia.³⁰³ Many of these healthcare workers were trained in infection prevention and control standards, triage, isolation measures, and EVD case management so that they could properly care for EVD patients.³⁰⁴ According to USAID officials, these civilian responders have potential to serve as community health workers and enhance local health systems for many years to come.³⁰⁵ The number of U.S. Government-supported civilian responders engaged in the overall Ebola response reportedly rose to above 10,000 by February 2015.³⁰⁶

U.S. Government agencies continued to provide needed assistance to West Africa even as the number of confirmed EVD cases

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declined and DoD began reducing its personnel levels in Liberia.³⁰⁷ In March 2015, WHO, with funding from USAID, supported Liberia with the next phase of the EVD response by delivering medical equipment and technical expertise to deter any resurgence in EVD. Under this arrangement, WHO is supplying PPE to both EVD and non-EVD health facilities and providing infection protection and control training for healthcare workers across the country.³⁰⁸ USAID has also supported healthcare worker training by partnering with the International Rescue Committee to train staff in infection prevention and control protocols in Liberia and Sierra Leone.³⁰⁹



A patient receives a dose of an investigational Ebola vaccine at the NIH Clinical Center in Bethesda, MD. (Photo provided by National Institute of Allergy and Infectious Diseases, September 2, 2014)

At the start of the EVD outbreak in West Africa, there were no tested and approved vaccines capable of preventing transmission of the disease for humans. The international community has since worked to develop both vaccines and therapeutic medicines for EVD patients.³¹⁰ In September 2014, WHO held a consultation to discuss fast tracking treatments and vaccines, none of which had been approved for use in humans at the time.³¹¹ Since then, U.S. Government agencies such as CDC and the Defense Advanced Research Projects Agency (DARPA) have worked to develop EVD vaccines and treatments.³¹² In February 2015, the U.S. Government also formed a joint clinical research partnership with Liberia to launch vaccination trials. The National Institutes of Health (NIH) is assisting in the safety and conduct of the trials, which will randomly test approximately 27,000 volunteers with two different potential vaccines.³¹³ As of February 2015, two vaccines

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and several treatments were undergoing trials with patients in Guinea, Liberia, and Sierra Leone.³¹⁴

In addition to vaccines, the U.S. Government is assisting and funding the development of EVD therapeutic drugs in conjunction with pharmaceutical companies. In particular, Mapp Biopharmaceuticals is working with DoD's Defense Threat Reduction Agency (DTRA) and HHS's Biomedical Advanced Research and Development Authority (BARDA) to develop ZMapp, a therapeutic drug with antibodies grown in tobacco plants. Two other therapeutic drugs that have shown promise in combatting EVD—TKM-Ebola and BCX4430—are being developed by other entities in conjunction with the U.S. Government and are being tested in the United States and West Africa.³¹⁵

SUPPORTING PUBLIC OUTREACH AND COMMUNICATIONS

Before the 2014-2015 West African Ebola outbreak, EVD had not been seen in the region. The healthcare community initially suspected the infection was Lassa fever, an infection that occurs frequently in the region and treated it accordingly, without using the additional precautions and equipment called for in EVD treatment protocols.³¹⁶ As a result, in the early stages of the EVD outbreak, caregivers—both in community and dedicated healthcare settings—did not always take precautions needed to contain EVD. Moreover, the population at large was not well-educated on the virulence of the illness or the significance of this elevated virulence.

Education and communication activities became a priority after the international community confirmed the illness was caused by the Ebola virus. These efforts focused in part on the healthcare community.

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An Ebola response team educates townspeople about Ebola. (Photo by Morgana Wingard for USAID, Bong County, Liberia, October 9, 2014)

The U.S. Government invested heavily in the training and education of healthcare workers and burial teams to stop the spread of EVD to those on the front lines of containing the epidemic.³¹⁷ USAID implementing partners provided training on comprehensive infection control in health facilities, and supported training efforts in Sierra Leone to teach infection prevention and control in the context of EVD, with an emphasis on reaching out to health workers in peripheral health units.³¹⁸ USAID sponsored similar infection control training in Guinea, including training on PPE use and the delivery of kits for health facilities not designated as EVD treatment centers.³¹⁹ By mid-February 2015, U.S. civilian and military personnel had trained more than 1,500 healthcare professionals on safe practices for providing medical care to EVD patients.³²⁰

MISCONCEPTIONS AND MISINFORMATION ABOUT EVD

The EVD outbreak did not take place in a vacuum. It hit some of the poorest countries in the world, where a recent history of civil war has left the infrastructure in poor condition; and where high levels of perceived corruption undermine trust in systems designed to serve the population.³²¹ Misinformation about EVD, its transmission, and its treatment protocols contributed to the spread of the Ebola virus throughout West Africa.

One survivor spoke directly about rumors surrounding EVD. After coming into contact with a sick family member, Umaru became symptomatic and went to an Ebola Treatment Center. He describes “sleepless nights and nightmares because I thought that people who have Ebola don’t survive. At that time, there were a lot of rumors that people at the centers got injected with something that made them die.”³²²

In an environment with misinformation, the act of seeking treatment took special will. Rumors and misinformation contributed to the continued spread of EVD as well as the violence committed against aid workers, making efforts to provide reliable information all the more critical to stopping the outbreak.³²³

Given the scope of the EVD crisis, educating the general population was also important to containing the spread of EVD. This was particularly the case because, in many instances, those providing care to EVD victims were family members. However, efforts to reach the general public with related information were not without challenges. For example, in Guinea, education and outreach efforts reportedly faced skepticism bred from years of political

instability and corruption, mistrust of international actors, and locally-generated counter-narratives.³²⁴

U.S. Government outreach efforts on EVD risks and needed precautions have touched on every aspect of the overarching response strategy: containment through seeking proper medical help and isolation of the ill, precautions for caring for the ill if medical assistance is unavailable, safe and dignified burial practices, and cooperation with contact tracing activities. USAID funded a Liberian social mobilization campaign led by Mercy Corps that included national and community-level messages delivered across available media.³²⁵ Working through IFRC, USAID supported further efforts to raise public awareness about how Ebola is transmitted and effective prevention practices. One of IFRC's tactics was to host a 1-hour radio show every week in which listeners could call in and ask questions about EVD and receive credible answers. The radio show had a reach of approximately 6.3 million people across Sierra Leone.³²⁶

Communication and outreach efforts have been important components of the overall strategy to reduce EVD infections across the region.³²⁷ In Guinea, USAID supported implementing partner Internews to provide Ebola messaging through local media.³²⁸ Also in Guinea, implementing partners Plan Guinea, Helen Keller International, Research Triangle International, and Jhpiego utilized U.S. Government funding to deliver community outreach and health messaging.³²⁹ Meanwhile, USAID worked through implementing partner John Hopkins Center for Communication Programs to develop EVD communications materials to reach out to communities in Guinea, Liberia, and Sierra Leone.³³⁰

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USAID has also partnered with local and international community outreach workers to provide information on identifying EVD symptoms as well as education on protective measures for avoiding infection. USAID-supported mobilization teams engaged in door-to-door outreach efforts, and worked with community leaders—including religious figures, celebrities, and influential community members—to advance understanding of the disease.³³¹

By the end of this reporting period, the U.S. Government had continuing partnerships with several UN agencies and NGOs to reach communities across the three affected countries with messages that promote positive health habits and fight against stigmatization of EVD survivors.

CRITICISMS OF THE RESPONSE

The international response to the EVD outbreak in West Africa has been the subject of some criticism. In particular, NGOs, health officials, and media representatives have been critical of the slow start of the international response effort and the management of response activities.

NGOs, international health officials, and the media have described initial international response efforts in West Africa as sluggish.³³² NGO concerns that the area was facing an unprecedented health crisis were reportedly met with skepticism by WHO officials, who reportedly did not quickly recognize that response needs had outpaced available capacity.³³³ Health officials have also indicated that WHO was slow to see the outbreak as a global health crisis, only declaring it an international public health emergency in August 2014.³³⁴

RESPONSE

Others have been critical of the management of the response. Several news reports have suggested that different approaches to allocating response resources would have been productive. In December 2014, MSF pointed out that efforts to build case management capacity in Liberia, for example, had succeeded in Monrovia where there were few EVD cases but that other areas of the country lacked facilities to address their patient volume.³³⁵ Media reports have suggested that the focus on construction of ETUs may have been less effective than social mobilization efforts geared toward increased community engagement in response efforts.³³⁶ Critics have also expressed concern about the building of excess ETUs based on early, dire projections.³³⁷ Others have indicated that many ETUs in Liberia were only completed when the epidemic had subsided and treated few patients as a result.³³⁸ USAID OIG will be examining the allocation of selected response resources in its ongoing audit of USAID's medical commodity management efforts in connection with the Ebola outbreak.



*Alex, an Ebola survivor..
(Morgana Wingard for USAID,
Bong County, Liberia, October 9, 2014).*

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ORGANIZING, STAFFING, AND FUNDING EBOLA RESPONSE AND PREPAREDNESS EFFORTS

The Ebola outbreak in West Africa triggered a large-scale response from the international community, including the U.S. Government. This section addresses the organization of response and preparedness. It also addresses the staffing and financial resources applied by U.S. federal departments and agencies to assist in the overall international effort to combat the Ebola outbreak and prepare for future epidemics of this kind.

ORGANIZATION OF INTERNATIONAL RESPONSE ACTIVITIES

WORLD HEALTH ORGANIZATION

WHO serves as the leading authority for health within the UN system and is charged with shaping global health policy and research, setting global health standards, providing health sector support to countries, and examining global health situations and developments.³³⁹ In addition, WHO has a responsibility for providing aid and technical assistance to countries during emergencies upon the request of host governments.³⁴⁰ WHO had a part in coordinating the initial public health response to the EVD epidemic and has sought to advance preparedness through measures to improve affected countries' operational readiness.³⁴¹

WHO is organized into regional offices responsible for activities and policies within their respective areas. WHO's Regional Office for Africa, based in Brazzaville, Republic of Congo, has had a role in the UN organization's response activities related to this outbreak. In addition, WHO country and liaison offices in West Africa have

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been responsible for assisting affected countries in reaching their health objectives and resolving health issues.³⁴²

UNMEER

In an effort to increase the intensity and management of the international response to Ebola, the UN established the UN Mission for Ebola Emergency Response or UNMEER following the UN Security Council's emergency meeting on September 18, 2014.³⁴³ UNMEER is a temporary body tasked with coordinating planning and response activities and helping to address the larger socioeconomic effects of the EVD outbreak.³⁴⁴ UNMEER was established with an emphasis on five priorities: stopping the outbreak, treating the infected, ensuring essential services, preserving stability, and preventing further outbreaks.³⁴⁵ UNMEER was also charged with coordinating Ebola-related efforts, including determining where the work of different UN agencies, national governments, key NGOs, and humanitarian organizations was most needed.³⁴⁶

ORGANIZATION OF U.S. GOVERNMENT RESPONSE EFFORTS

Within the U.S. Government, USAID, HHS, DOS, and DoD have all contributed resources to combat the Ebola outbreak outside U.S. borders. USAID is responsible for leading the U.S. Government's overall international Ebola response effort and has provided a platform for coordinating U.S. Government response activities. CDC has led the medical and public health component of U.S. Government response efforts. DOS has had responsibility for advancing related diplomatic efforts, and DoD and other HHS components have made contributions as members of the overall response effort, providing specific support as needed.³⁴⁷ These

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federal agencies have worked together to advance the four primary goals outlined in the U.S. Global Ebola Strategy: controlling the outbreak, mitigating second order impacts, establishing coherent leadership and operations, and advancing global health security.³⁴⁸

The National Security Council supports the whole-of-government effort to combat the Ebola outbreak by providing a forum for coordination and resolution of related policy matters.³⁴⁹ To help coordinate interagency policy and planning efforts associated with the Ebola response, in early October 2014, the White House appointed a U.S. Government Ebola Response Coordinator.³⁵⁰

In addition to leading its own efforts to respond to Ebola, the U.S. Government has worked with and through other international partners to combat Ebola in West Africa. USAID has provided funding to numerous international organizations and NGOs and DoD has trained a workforce of local and international medical staff and provided logistical support to humanitarian and health efforts in West Africa.³⁵¹ WHO has received financial assistance and medical equipment, such as PPE, from USAID. Additionally, USAID and CDC have worked with WHO to establish the Community Care Campaign, an effort to develop CCCs to service at-risk households.³⁵² CCCs are staffed by NGOs using funding provided by USAID and WHO.³⁵³ The U.S. Government has coordinated response activities with UNMEER and co-located the headquarters for USAID response operations with the UNMEER office in Liberia.³⁵⁴

U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

USAID is an independent federal agency with programs and activities in more than 100 countries designed to end extreme poverty and promote resilient, democratic societies while advancing

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U.S. security and prosperity.³⁵⁵ USAID is the lead federal agency for providing humanitarian assistance in response to international crises and disasters and was designated the lead federal agency to manage and coordinate the U.S. effort to fight the Ebola outbreak abroad.³⁵⁶

USAID reported that more than 100 staff from 10 major units had worked in support of Ebola outbreak response efforts from October 1, 2014, to March 31, 2015.³⁵⁷ USAID has notified Congress of plans to establish 10 additional term-limited positions to support Ebola response efforts at headquarters and in the field.³⁵⁸

Although many USAID components have had a role in Ebola-related activities, the following units have been primarily involved in those efforts.

Ebola Task Force and Secretariat

USAID established an Ebola Task Force in August 2014 to help link and coordinate agency activities related to Ebola.³⁵⁹ The Task Force is a Washington, D.C.-based management and coordination structure consisting of representatives of all major USAID units working on Ebola-related matters.³⁶⁰

The Ebola Secretariat includes members of the Ebola Task Force detailed from other USAID units who are fully dedicated to the Ebola response. The Ebola Secretariat is charged with coordinating efforts across the four pillars of the U.S. Government EVD response strategy. The Ebola Secretariat also manages the agency budget and staffing processes related to Ebola, coordinates strategic planning around Ebola response and recovery, promotes related exchange among USAID bureaus and offices, and liaises

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with the State Department and other agencies involved in the Ebola response.³⁶¹

Office of U.S. Foreign Disaster Assistance (OFDA)

OFDA is the office within USAID responsible for providing emergency, non-food humanitarian assistance in response to international crises and disasters. An office within USAID's Bureau for Democracy, Conflict, and Humanitarian Assistance, OFDA is responsible for international disaster risk reduction, resilience, and coordination efforts, and also for devising, coordinating, and implementing strategies for responding to disasters. USAID Disaster Assistance Response and Response Management Teams operate under its purview.

Disaster Assistance Response Teams

When the size or scope of a disaster requires it, OFDA may send a DART to crisis-affected areas. Deployable within hours of an emergency, DARTs consist of humanitarian experts and technical advisors who assess the situation firsthand, identify the most urgent needs, and coordinate the U.S. Government response. DARTs employ the principles of chain-of-command and unity-of-command to help provide clear coordination and a manageable span of control.

DARTs are deployed at the discretion of the OFDA Director with the concurrence of the Chief of Mission following a Department of State disaster declaration. On August 4, 2014, the U.S. Ambassador to Liberia declared a disaster, which set in motion USAID activation and deployment of a regional DART team to Liberia, Sierra Leone, and Guinea to assess conditions, coordinate the interagency response, and identify gaps in the Ebola response effort. Its

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mission included planning, operations, logistics, and administration relating to the U.S. interagency Ebola response effort. The DART originally consisted of 15 staff from various federal agencies including USAID, CDC, DoD, HHS, and the U.S. Forest Service. CDC led the DART's public health and medical response positions.³⁶² The regional DART has deployed personnel to Liberia, Sierra Leone, Guinea, and Mali, and, at the height of the response effort comprised 106 personnel. The DART also temporarily deployed a liaison to Ghana to facilitate coordination with UNMEER.³⁶³

Response Management Team (RMT)

RMTs are Washington, D.C.-based units activated in response to international disasters that provide leadership and operational support for the U.S. Government response. RMTs manage disaster response strategy and planning activities, liaising with other U.S. Government agencies so that DARTs can focus on providing assistance in the field. The Ebola RMT includes staff from CDC, DoD, and HHS. RMT staff size has varied over the period of the Ebola crisis. As of the writing of this report, the Ebola RMT was operating with 23 staff.³⁶⁴

Bureau for Africa

USAID operates 27 regional and bilateral missions in Africa under the management of USAID's Bureau for Africa. USAID operates missions in Guinea, Liberia, Senegal, Ghana, and Mali that have provided coordination and support for U.S. Government efforts to fight Ebola in their respective countries. USAID does not have a mission in Sierra Leone, but the USAID mission in Guinea has personnel based in Sierra Leone to oversee programs there.

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The Africa Bureau consists of eight offices that support USAID missions in Sub-Saharan Africa. Until the Bureau established the Africa Ebola Unit, the Office of West African Affairs was the principal office within the Bureau supporting the Ebola outbreak response.³⁶⁵

Africa Ebola Unit (AEU)

The Africa Bureau established the AEU on March 18, 2015, to oversee implementation of Pillar II activities to mitigate the second-order effects stemming from the EVD outbreak, and to assume the responsibilities of the Ebola Secretariat in May 2015. AEU is directly responsible for implementing governance, social protection and economic crises mitigation activities under Pillar II. AEU works closely with the Office of West African Affairs, the Ebola Secretariat, and functional bureaus and independent offices in USAID to provide support to the involved missions.³⁶⁶

Global Health Bureau

USAID's Global Health Bureau is one of four functional bureaus in the agency and has the mission of helping address global health challenges with a focus on quality, availability, and use of essential health services. The Bureau supports field health programs and research and innovation to advance select health objectives, and coordinates with other donors to transfer new health technologies to the field. The Bureau has contributed staff to the Ebola Secretariat, RMT, and DART for the Ebola outbreak.³⁶⁷

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A U.S. military serviceman steps into a sanitization pan at the Bong County Ebola Treatment Unit, Liberia. (Photo by Morgana Wingard, USAID).

DEPARTMENT OF DEFENSE

DoD has played a key supporting role in efforts to control and reverse the Ebola outbreak in West Africa.

On September 6, 2014, the Secretary of Defense approved DoD support for a DOS request to construct an expeditionary hospital in West Africa as a healthcare worker EVD treatment facility.³⁶⁸ DoD declared the expanding effort an operation, naming it Operation United Assistance. Under OUA, DoD was authorized to provide direct support to the lead U.S. agency for response efforts, USAID.³⁶⁹

Many DoD components have been involved in the effort to combat the Ebola outbreak. As the cognizant Combatant Command, U.S. Africa Command (USAFRICOM) has assumed a primary role. USAFRICOM is responsible for U.S. military activities in Africa. In July 2014, USAFRICOM began contingency planning to identify response options and develop plans for activities such as the evacuation of American citizens.³⁷⁰

In support of USAID efforts, USAFRICOM established a joint military headquarters in Liberia and a logistical hub in Senegal to speed the flow of personnel, equipment, and supplies into West Africa.³⁷¹ USAFRICOM constructed the MMU and ETUs, provided engineering support in Liberia, and purchased and transported medical supplies, such as PPE.³⁷² DoD personnel conducted laboratory tests of suspected cases of EVD, provided

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test kits to medical authorities in Liberia and Sierra Leone, and trained healthcare workers.³⁷³ In addition, DoD reported that it provided on-call support to U.S. interagency and international partners and NGOs through USAID's mission tasking matrix. DoD's primary mission was to support U.S. response efforts in Liberia, although it has also provided some support to the other affected countries in the region.³⁷⁴

Other DoD Combatant Commands that have supported the U.S. Government effort include the U.S. European Command, U.S. Northern Command, and the U.S. Transportation Command. Defense agency support has been provided by the Defense Logistics Agency, DARPA, the National Geospatial Agency, and DTRA.³⁷⁵

DoD command elements rotated, and troop levels varied over the course of OUA. During the first week of December 2014, troop levels peaked at 2,900 personnel in West Africa.³⁷⁶ DoD units deployed for OUA included elements of the 101st Airborne Division Headquarters; the Headquarters staff of U.S. Army Africa; an Air Force Medical Group; a Kentucky National Guard unit; two Navy mobile laboratories; four Army laboratories; and other specialized military units.³⁷⁷

In February 2015, DoD began drawdown and transition activities and projected the redeployment of most U.S. Forces by April 2015.³⁷⁸ DoD is addressing continuing requirements identified by the U.S. Government, Government of Liberia, and international community through Operation Onward Liberty.³⁷⁹ Under this operation, elements of the U.S. Army's 48th Chemical, Biological, Radiological, Nuclear, and Explosives Brigade Headquarters have assumed responsibility for providing DoD support to ongoing and

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future mission requirements.³⁸⁰ DoD plans to retain approximately 100 civilians, military, and contractors in Liberia to support this effort.³⁸¹

DEPARTMENT OF STATE

DOS responses to EVD have involved headquarters components and U.S. embassies in West Africa. Embassies in Liberia, Sierra Leone, Guinea, Mali, and Senegal all participated in outbreak response efforts by increasing staff to assist national governments and hosting representatives from the international community and other U.S. Government agencies involved in response efforts.³⁸²

DOS responded to the EVD outbreak through the work of three headquarters components. The Bureau of African Affairs has provided administrative support to U.S. embassies in Sierra Leone, Liberia, and Guinea, as the severity of the crisis overwhelmed the management teams at these embassies.³⁸³ The Bureau of African Affairs also provided administrative support to the Ebola Coordination Unit, for public diplomacy efforts by U.S. embassies in Sierra Leone, Liberia, and Guinea, and to the Broadcasting Board of Governors to support public diplomacy efforts on Ebola as a continuation of previous Voice of America work.³⁸⁴

Resources from the Office of Cooperative Threat Reduction have provided oversight of efforts of the Bureau of International Security and Nonproliferation, which seeks to prevent the proliferation of weapons of mass destruction and related materials and expertise, and to mitigate the risk of illicit acquisition of Ebola.³⁸⁵

Two units that report to the Under Secretary for Management have also had a significant role in Ebola response efforts. The Bureau of Administration has supported schools in Liberia and Guinea, where

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educational systems were disrupted by the epidemic. Meanwhile, the Office of the Medical Director (OMD) has supported several EVD operational and medical response efforts. In particular, OMD awarded a contract to a commercial airline to support air ambulance medical evacuations of U.S. Government personnel operating in the region in the event of EVD infection.³⁸⁶

DEPARTMENT OF HEALTH AND HUMAN SERVICES

HHS is the primary federal department responsible for the health of American citizens and delivery of essential services. Several HHS agencies have had a significant role in the U.S. Government's response to the EVD outbreak in West Africa. In particular, CDC, the Food and Drug Administration (FDA), Office of the Assistant Secretary for Preparedness and Response (ASPR), USPHS, and NIH have all played a part in this effort.

Centers for Disease Control and Prevention

CDC is responsible for maintaining the nation's health security, and conducts critical science and provides guidance to protect against major health threats toward this end.³⁸⁷ CDC is the medical response and public health lead for the U.S. Government Ebola response.³⁸⁸ CDC has coordinated operations and logistics in support of EVD response efforts through its EOC and supported critical EVD response needs at home and abroad. Hundreds of CDC staff have provided logistics, staffing, communication, analytics, management, and other support functions for the response. In Guinea, Sierra Leone, and Liberia, CDC staff assisted with response efforts, including surveillance, contact tracing, data management, laboratory testing, and health education.³⁸⁹ Domestically, CDC has managed hospital and transit area

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infectious disease preparedness and assumed responsibility for related health travel advisories.³⁹⁰

CDC continues to monitor and respond to the EVD outbreak and remains a primary agency in the U.S. Government's effort to end the outbreak. Since July 2014, CDC has sent more than 800 personnel to West Africa on more than 1,500 missions to help stop the spread of EVD. In addition, according to CDC, more than 2,900 workers have staffed the EOC at CDC's headquarters. CDC reports that it has also performed 12,000 lab tests, helped train 23,000 healthcare workers in West Africa and assisted in screening 150,000 travelers exiting the region.³⁹¹ In late March 2015, CDC reported that 315 employees were deployed as part of the Ebola response.³⁹²

Office of the Assistant Secretary for Preparedness and Response

ASPR serves as the U.S. Government's public health and medical preparedness and response policy coordinator. Created in the wake of Hurricane Katrina, ASPR is the lead federal entity for preventing, preparing for, and responding to the effects of public health emergencies and disasters.³⁹³ ASPR has provided policy coordination in the effort to combat EVD and, in conjunction with CDC, advised the healthcare workforce on proper EVD care precautions and case management techniques. ASPR has also supported the development of new Ebola drugs under BARDA, which serves as HHS's lead for developing and procuring medical countermeasures.³⁹⁴

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U.S. Public Health Service

Composed of uniformed service men and women, USPHS's Commissioned Corps is a team of more than 6,000 public health professionals who serve within various U.S. Government agencies as both public health officials and clinical specialists.³⁹⁵ Headed by the Surgeon General and Assistant Secretary of Health, the Commissioned Corps roster of administrators, clinicians, and support staff provides rapid response to public health needs. The Commissioned Corps responded to the EVD outbreak in West Africa by deploying members to the region to support the work of several U.S. Government agencies.³⁹⁶ The Commissioned Corps worked with CDC, for example, to co-lead response teams and support EVD examination and response activities.³⁹⁷ In Liberia, rotating teams of more than 65 Commissioned Corps officers worked in partnership with DoD to staff and manage the MMU, a hospital specifically designated to treat infected healthcare workers.³⁹⁸

National Institutes of Health (NIH)

NIH is the U.S. Government's primary medical research agency.³⁹⁹ Within NIH, NIAID supports basic, applied, and clinical research to develop diagnostics, therapeutics, and vaccines for infectious diseases, including viral hemorrhagic fevers like EVD. In the effort to combat EVD, NIAID has supported the study of how EVD causes illness in animals and people and worked to address the disease by developing new diagnostics, vaccines, and treatments.

NIAID's has worked closely with DoD and private pharmaceutical and biotechnology companies to facilitate the development of EVD vaccine candidates. NIAID Vaccine Research Center scientists, in collaboration with GlaxoSmithKline, for example, have reportedly

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President Barack Obama tours the Vaccine Research Center at NIAID in Bethesda, MD. (White House photo by Pete Souza, December. 2, 2014)

developed an experimental vaccine that expresses an Ebola virus glycoprotein designed to stimulate protective immune responses against Ebola.⁴⁰⁰

Food and Drug Administration

FDA works to protect public health by regulating the quality and safety of food, tobacco, and medical products. In the effort to combat EVD, FDA established an Ebola Task Force to coordinate with other agencies on medical product development and availability. FDA has partnered with WHO and others on the development and use of clinical trials and medical products associated with the Ebola virus, and has also taken steps to increase the availability of needed equipment such as testing kits and PPE.⁴⁰¹ In February 2015, for example, FDA authorized a rapid

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field test for EVD that can be used outside laboratories and yields results within 15 minutes, as opposed to 4 to 6 hours. In addition, FDA has advised other U.S. Government agencies on approaches for expediting the development of products such as therapeutic drugs and vaccines and worked closely with NIH to help expedite the launch of vaccine and therapeutic trials in the United States and West Africa.⁴⁰² FDA has also provided personnel to assist with the U.S. Government's EVD response efforts. In connection with the EVD response effort, FDA has reportedly made 72 personnel available overseas for deployments that have averaged 60 days in length.⁴⁰³

FUNDING RESPONSE AND PREPAREDNESS EFFORTS

Initial U.S. Government response efforts were supported by funds appropriated under existing accounts. USAID, for example, tapped into existing International Disaster Assistance (IDA) funds provided to the agency for FY 2014. DoD received congressional approval to use up to \$750 million in reprogrammed funds transferred to its Overseas Humanitarian, Disaster Assistance, and Civic Aid (OHDACA) account to support Ebola response efforts.⁴⁰⁴

As the response effort grew in intensity, participating federal agencies identified future funding requirements for different outbreak scenarios. They worked with the Office of Management and Budget to develop a formal request and, on November 5, 2014, the President transmitted an emergency appropriations request to Congress for \$6.18 billion in funding for domestic and international responses to Ebola. This request was designed to enable the Government to implement its strategy to contain and end the EVD outbreak in West Africa, strengthen domestic preparedness,

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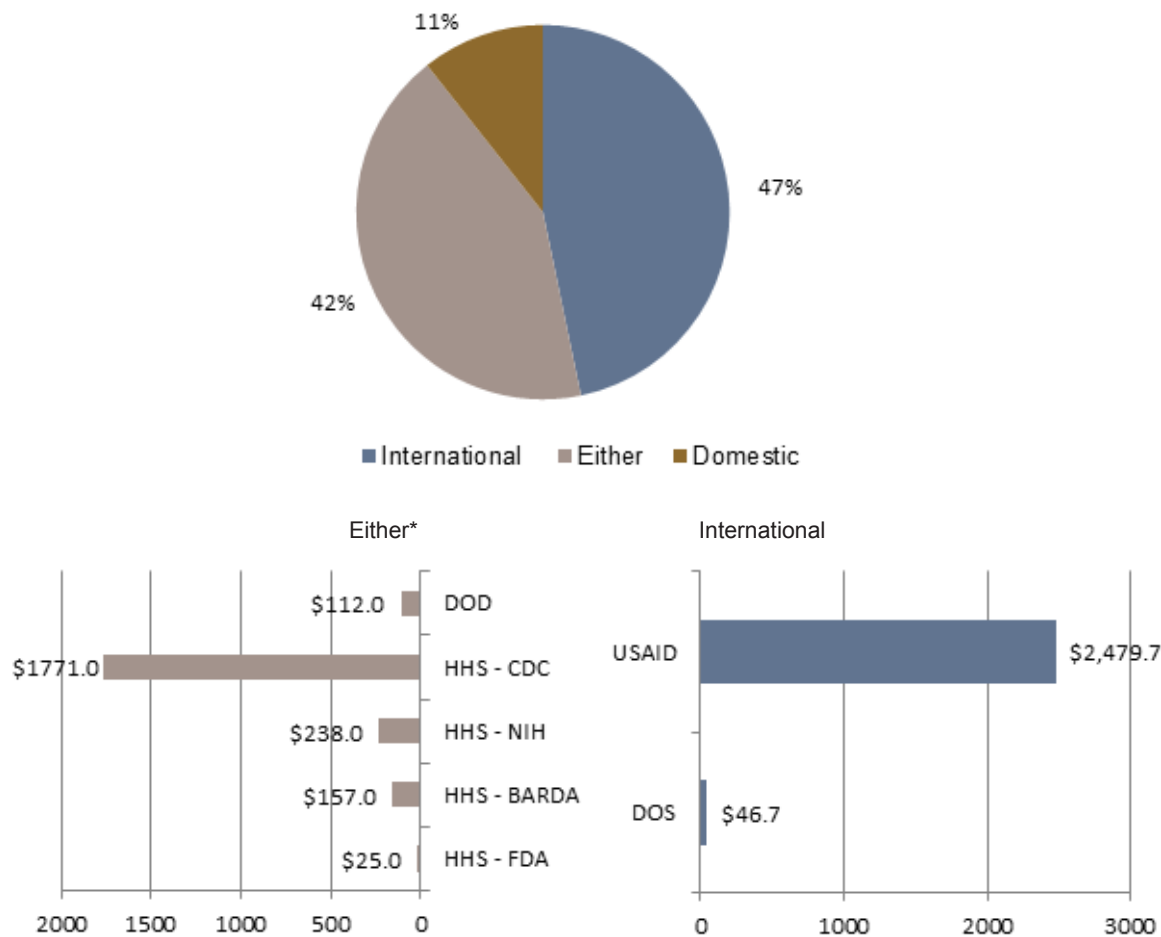
accelerate testing and procurement of related medicines, and advance global capacity to prevent the spread of infectious disease outbreaks in the future.⁴⁰⁵ Of this total, \$1.54 billion was requested in the form of contingency funding to address unanticipated developments in the epidemic.⁴⁰⁶

Congress acted on this request as part of its FY 2015 omnibus appropriation (P.L. 113-235). On December 16, 2014, the President signed the omnibus into law. The appropriation provided for the bulk of the items in the Administration's request but did not fund the specific requested pool of resources for future contingencies. In total, Congress provided more than \$5.370 billion in emergency funds for Ebola prevention and response. Of the total amount provided, \$2.526 billion was specifically designated for international efforts, with an additional \$2.303 billion for use in either domestic or international settings.⁴⁰⁷

Congress appropriated these funds to several different federal agencies. Whereas appropriations to USAID and DOS have a clear tie to international activities, funds appropriated to HHS and DoD were approved to support domestic or international work.⁴⁰⁸ For example, funding that supports vaccine and therapeutic drug development may be used in the United States or abroad.

Funds that Congress provided for Ebola preparedness and response were made available over different periods and were subject to different use and reporting requirements. Congress limited funding for DOS diplomatic and consular programs and USAID operating expenses for use through FY 2016,⁴⁰⁹ designated the period of availability for CDC funding through FY 2019,⁴¹⁰ and provided that USAID Global Health and IDA funds would be available until expended.⁴¹¹ Congress also provided that funds

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FY 2015 Ebola Response and Preparedness Appropriations by Type

Source: Consolidated and Further Continuing Appropriations Act, 2015, P.L. 113-235.

*"Either" funds are those funds that may be used for either international or domestic purposes.

available to DOS and USAID could be used to reimburse other agency accounts for obligations made prior to the enactment of the appropriation measure.⁴¹² Finally, whereas Congress required HHS to provide notification of uses of funding in only limited cases, it mandated that USAID and DOS provide spending plans upfront and monthly reports on the use of appropriated Ebola preparedness and response funds through at least September 30, 2016.⁴¹³

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INTERNATIONAL EBOLA-RELATED APPROPRIATIONS, OBLIGATIONS, AND DISBURSEMENTS AS OF MARCH 31, 2015 (UNAUDITED, IN MILLIONS OF DOLLARS)

Department / Agency Account	Appropriated [†]			Obligated	Disbursed
	FY 2014	FY 2015	Total	FY 2014- 2015	FY 2014 - 2015
DoD[†]	810.0	112.0	922.0	316.7	116.0
<i>OHDACA</i>	750.0	-	750.0	301.2	116.0
<i>Cooperative Threat Reduction</i>	60.0	-	60.0	15.5	-
<i>Research & Development, Training & Education</i>	-	95.0 [‡]	95.0 [‡]	*	*
<i>Procurement</i>	-	17.0 [‡]	17.0 [‡]	*	*
DOS	-	46.7	46.7	22.1	9.0
<i>Diplomatic & Consular Programs</i>	-	36.4	36.4	22.1	9.0
<i>Nonproliferation, Anti-Terrorism, Demining, & Related Programs</i>	-	5.3	5.3	-	-
<i>Economic Support Fund (ESF)</i>	-	5.0	5.0	-	-
HHS	33.2	1,621.4	1,654.6	138.2	14.0
<i>CDC</i>	-	1,200.0	1,200.0	38.0	7.9
<i>NIH</i>	33.2	238.0 [§]	271.2 [§]	98.8	6.1
<i>Public Health & Social Services Emergency Fund</i>	-	157.0 [§]	157.0 [§]	-	-
<i>FDA</i>	-	26.4 [§]	26.4 [§]	1.4	-
USAID^{††}	-	2,479.7	2,479.7	687.0	166.0
<i>IDA</i>	-	1,436.3 ^{‡‡}	1,436.3	657.3	160.1
<i>ESF</i>	-	706.7 ^{‡‡}	706.7	29.7	5.9
<i>Global Health Programs</i>	-	312.0	312.0	-	-
<i>Operating Expenses</i>	-	19.0	19.0	<0.1	-
<i>OIG</i>	-	5.6	5.6	-	-
TOTAL	843.2	4,259.8	5,103.0	1,163.9	305.1

Table 1: International Ebola-related appropriations, obligations, and disbursements as of March 31, 2015.
(unaudited, in millions of dollars)

Sources: DoD OIG, DOS OIG, HHS OIG, USAID Office of Budget and Resource Management, Congressional Research Service, and P.L. 113-235.

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TABLE NOTES

† Includes funding that was originally appropriated to other accounts or for other purposes and reprogrammed to support Ebola response activities. It does not include funds specifically appropriated for domestic Ebola preparedness and response.

* Data unavailable for this period.

‡ DoD management asserted to DoD OIG that the DoD FY 2014 and FY 2013 Basic Financial Statements would not substantially conform to U.S. generally accepted accounting principles and that DoD financial management and feeder systems were unable to adequately support material amounts on the basic financial statements as of September 30, 2014. Because of the significance of this and other scope limitation matters, DoD OIG could not obtain sufficient appropriate evidence to provide a basis for an audit opinion. Accordingly, DoD OIG did not express an opinion on the DoD FY 2014 and FY 2013 Basic Financial Statements. Thus, the basic financial statements may have undetected misstatements that are both material and pervasive.

§ Includes funding for possible domestic or international use.

†† Reported appropriations, obligations, and disbursements for USAID do not reflect spending on preexisting programs and activities in countries affected by the EVD outbreak that were substantially modified in response to the outbreak. Reported amounts for USAID are based on information in agency financial systems. Past USAID financial management practices have led USAID OIG to issue a disclaimer on the agency's financial statements. OIG could not render an opinion on USAID's most recent financial statements because of material unsupported adjustments USAID made to reconcile its general and subsidiary ledgers.

‡‡ These totals include past and anticipated future reimbursements to FY 2014 accounts against which obligations were made prior to the enactment of the FY 2015 omnibus appropriation. USAID used \$376.8 million in Ebola emergency IDA funds to reimburse FY 2014 and FY 2015 IDA accounts for pre-enactment obligations. USAID plans to use \$29.7 million in Ebola emergency ESF funding to reimburse FY 2014 and 2015 ESF accounts for pre-enactment obligations once these funds have been released by Congress.

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Overall, as shown in Table 1, available financial reporting on interagency Ebola preparedness and response activities indicates that U.S. Government agencies had obligated \$1.164 billion toward these efforts by March 31, 2015.

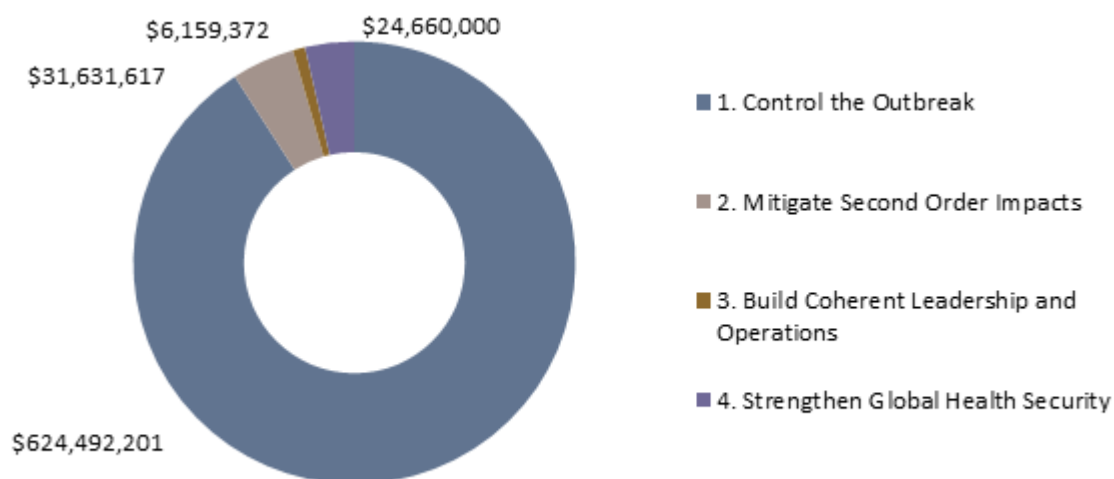
Available information on U.S. Government Ebola-related spending indicates that \$305.1 million had been disbursed as of March 31, 2015. As a share of total obligations, these disbursements accounted for 26 percent.

Data on disbursements can provide valuable information about how much money has been spent on activities as well as the amounts of funding that remain available for expenditure. However, this information is subject to a noteworthy limitation. Provided a letter of credit from USAID, its humanitarian assistance implementing partners may accrue significant expenses before drawing down on agency funds. As a result, disbursement data on these efforts does not always fully reflect the progress of humanitarian assistance efforts in financial terms.⁴¹⁴ As of March 31, 2015, for example, OFDA reported Ebola-related disbursements totaling \$132.0 million. When combined with accrued expenditures through that date, however, OFDA's total expenditures amount to 139 percent more, or \$315.7 million.⁴¹⁵

USAID tracks its project spending in line with the U.S. Government strategy for Ebola preparedness and response. As of March 31, 2015, obligations associated with project activities under Pillar 1 of the strategy, which is geared toward controlling the outbreak and was thus the initial focus of USAID programming, accounted for 91 percent of the total. As Chart 2 illustrates, USAID activities under Pillars 4 and 2 accounted for 5 and 4 percent, respectively, of obligations, while Pillar 3 activities were

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associated with less than 1 percent of USAID obligations through the end of the reporting period. These differences are similar when disbursements are considered, as Pillar 1 activities accounted for 90 percent of USAID disbursements through March 31, 2015.⁴¹⁶



USAID Obligations by Pillar (unaudited)

Source: USAID, Office of Budget and Resource Management

USAID also tracks its spending by geographic focus. About 13 percent of USAID obligations during the reporting period supported regional activities. Most of USAID's obligations were concentrated in Liberia, which accounted for more than two-thirds of the agency's Ebola-related obligations during the period. Meanwhile, Sierra Leone- and Guinea-based activities were associated with 11 and 8 percent, respectively, while activities with a focus on Mali were linked to 1 percent of these obligations.⁴¹⁷

OVERSIGHT

OVERSIGHT COORDINATION, PLANS, AND ACTIVITIES

OVERSIGHT FRAMEWORK AND COORDINATION

Congress prescribed a new oversight framework for overseas contingency operations in the 2013 National Defense Authorization Act, P.L. 112-239. This law amended the IG Act to provide for increased coordination, reporting, and oversight relating to overseas contingency operations. Under this arrangement, existing agency-specific OIGs are to provide more intensive coordination of oversight efforts and additional reporting regarding the progress of overseas contingency operations and corresponding oversight efforts.

DoD, DOS, and USAID OIGs began Section 8L-related planning efforts in 2014. In early September 2014, more than 90 representatives from DoD OIG, DOS OIG, and USAID OIG met at a Joint IG Summit to discuss requirements and challenges



for implementing a coordinated oversight arrangement among the three OIGs in future overseas contingency operations. On September 15, 2014, the heads of these three OIGs signed a Joint Memorandum of Intent for continued coordination and planning.⁴¹⁸

On October 16, 2014, the President issued an Executive Order invoking his authority under Title 10 U.S.C. §12304 to authorize the Secretary of Defense to order reserve units and individuals to active duty to support Operation United Assistance, the fight against the EVD outbreak in West Africa.⁴¹⁹ The Secretary of Defense exercised this authority on November 13, 2014, and the Secretary of the Army approved mobilization orders for reservists on November 25, 2014.⁴²⁰

On February 24, 2015, the Chair of the Council of the Inspectors General on Integrity and Efficiency designated Jon T. Rymer, the DoD Inspector General, as the Lead IG for OUA.⁴²¹ Mr. Rymer subsequently appointed Catherine M. Trujillo, the USAID Acting Deputy Inspector General, as the Associate IG to lead OUA oversight planning, coordinating and reporting activities.⁴²²



Bong County, Liberia ETU. (Photo by Morgana Wingard for USAID, October 9, 2014)

To ensure comprehensive coverage of the international aspects of the U.S. Government's Ebola response and preparedness efforts, oversight coordination and planning of oversight was extended beyond the three aforementioned OIGs to include the HHS OIG. In addition, this report describes related work on the part of the Department of Homeland Security (DHS) OIG.

Since the December 2014 appropriation of funds for Ebola response and preparedness activities, representatives from the OIGs with an international Ebola preparedness and response oversight mandate have met to share oversight and reporting plans and activities and explore opportunities for coordination on a number of occasions. Initial oversight activities are focusing primarily on the first pillar of the U.S. Government response to Ebola relating to the effort to control the outbreak. As U.S. Government programming in the responding federal departments and agencies increasingly shifts to address second-order effects of the epidemic, building coherent leadership and operations, and strengthening global health security, the oversight community will adjust the focus of oversight to provide needed coverage.

Current plans are for OIG quarterly reporting on the progress of Ebola response and preparedness activities to conclude with a report covering U.S. Government activities through the end of FY 2015. The affected OIGs are planning accordingly because Section 8L authorities and requirements under the IG Act terminate at the end of the first year after which Congress has appropriated less than \$100 million for a pertinent overseas contingency operation. Although Congress appropriated substantial funding for Ebola response and preparedness in December 2014, it designated the funds as "emergency," and not "overseas contingency

operation” funds, and did not link them to OUA. Consequently, barring a subsequent appropriation of \$100 million or more for an Ebola overseas contingency operation, Section 8L authorities and responsibilities relating to overseas contingency operations in connection with the EVD outbreak in West Africa will conclude at the end of this fiscal year.⁴²³ Routine oversight of agency efforts to combat EVD within the jurisdictions of the respective OIGs, however, will continue in accordance with the law.

OVERSIGHT PLANS AND ACTIVITIES

The DHS, DoD, DOS, HHS, and USAID OIGs all have oversight roles relating to U.S. Government Ebola response and preparedness programs and operations. In addition to outreach and investigative efforts, these OIGs have issued two reports related to Ebola response and preparedness while work is in progress or planned on nine others.

DEPARTMENT OF DEFENSE OIG

Two DoD OIG components are engaged in Ebola-related oversight activities: the Office of Auditing and the Office of Special Plans and Operations.

Ongoing Work

Three DoD OIG audits and evaluations of Ebola-related activities are currently under way.

Audit of Contract Oversight for the Logistics Civil Augmentation Program (LOGCAP) Task Orders Supporting Operation United Assistance. This audit will determine whether the U.S. Army is providing sufficient contract oversight for Logistics Civil Augmentation Program task orders issued to support OUA. In

particular, the audit will determine whether the Army has adequate contracting officer's representatives (CORs), whether CORs are appropriately trained and appointed, and whether they have sufficient quality assurance plans to ensure that DoD receives the goods and services under the terms of the contract.

Evaluation of DoD Force Health Protection Measures During Operation United Assistance. This evaluation will examine OUA health protection policies, programs, and logistical requirements for all personnel for whom DoD may be responsible to identify possible gaps between force health protection requirements and implementation, and to recommend improvements to force health protection measures, if appropriate.

Audit of Army's Administration of Contracts for Operation United Assistance. This audit will determine whether Army controls for monitoring contractor performance are adequate for supporting OUA contracts.⁴²⁴

Outreach Activities

For this reporting period, the DoD Hotline had no contacts, complaints, cases, or allegations related to OUA operations to fight Ebola in West Africa. However, the DoD Hotline implemented emergency procedures to handle any contact alleging a potential Ebola infection, including immediate notification to CDC.⁴²⁵

DEPARTMENT OF HEALTH AND HUMAN SERVICES OIG

HHS OIG has an ongoing review being conducted by the Office of Evaluations and Inspections that may have international implications, and one planned audit with an international focus that will be performed by the Office of Audit Services.

Ongoing Work

Review of Hospital Preparedness and Response to High-Risk Infectious Diseases. Hospitals serve an important community role in preparing for and responding to public health threats from high-risk infectious diseases. Several HHS operating divisions provide guidance, oversight, and technical assistance to hospitals in fulfilling this role, including CDC, the Centers for Medicare and Medicaid Services, and ASPR. The objectives of this evaluation are to examine HHS guidance, assistance, and oversight of hospital preparedness and response to high-risk infectious diseases, as well as to determine the current status of and barriers to hospital preparedness at a nationally-projectable sample of hospitals.⁴²⁶

Planned Work

Review of the Centers for Disease Control and Prevention's Ebola-Related Awards. The Consolidated and Further Continuing Appropriations Act of 2015 provided \$2.7 billion in emergency funding to HHS for Ebola preparedness and response activities. Of this total, \$1.771 billion was allocated to CDC “for ‘CDC-Wide Activities and Program Support,’...to remain available until September 30, 2019, to prevent, prepare for, and respond to Ebola domestically and internationally.”

CDC specifically identified \$1.2 billion for its international response efforts as follows:

- \$603 million for international Ebola response and preparedness activities in the current three epidemic and high-priority countries, including border countries.
- \$597 million to support the National Public Health Institutes and implementation of the Global Health Security Agenda.

Additional Global Health Security countries will be prioritized based on urgently needed investments in vulnerable nations, transport hubs, and states without the capacity to prevent global spread of Ebola or stem the tide of future threats.

The objective of this audit is to determine whether CDC awarded Ebola-related funds in FY 2015 in compliance with federal and departmental regulations.⁴²⁷

DEPARTMENT OF HOMELAND SECURITY OIG

Completed Work

DHS OIG recently completed one audit of DHS relevant to Ebola preparedness and response activities in light of its focus on personal protective equipment management.

DHS Has Not Effectively Managed Pandemic Personal Protective Equipment and Antiviral Medical Countermeasures
(Report No. [OIG-14-149](#), August 26, 2014)

DHS OIG audited DHS's pandemic preparedness efforts to determine whether DHS had effectively managed its pandemic preparedness supply of personal protective equipment and antiviral medical countermeasures. DHS OIG determined that DHS did not adequately conduct a needs assessment and did not effectively manage its pandemic preparedness supply of pandemic personal protective equipment and antiviral medical countermeasures as part of pandemic preparations. As a result, DHS could not ensure it had sufficient personal protective equipment and antiviral medical countermeasures for a pandemic response. In addition, DHS OIG identified concerns related to oversight of antibiotic medical countermeasures.

DHS OIG made 11 recommendations to strengthen program management, performance, and oversight, and the DHS concurred with all of them.⁴²⁸

Ongoing Work

DHS OIG is currently examining other DHS practices with a possible bearing on Ebola.

DHS Pandemic Planning and Response. This audit will determine whether DHS has implemented adequate preparedness plans to continue mission essential functions during a pandemic and has effectively implemented DHS's enhanced screening measures for the response to Ebola.⁴²⁹

DEPARTMENT OF STATE OIG

Planned Work

DOS OIG has one planned audit that will be performed by the Office of Audit Services.

Audit of Aeromedical Biological Containment Evacuation Services Contract Provided to Phoenix Air Group. DOS OIG is currently developing a proposal for an audit of an air evacuation contract. Preliminary plans are for DOS OIG to audit aeromedical biological containment evacuation services provided to the Phoenix Air Group.⁴³⁰

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*Boxes of household protection kits.
(Photo by Morgana Wingard for
USAID, Monrovia, Liberia,
September 24, 2014)*

U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT OIG

USAID OIG has an array of completed, ongoing, and planned oversight efforts relating to Ebola activities. These efforts are managed by OIG units in Washington, D.C.; Dakar, Senegal; and Pretoria, South Africa.

Completed Work

Although USAID OIG developed plans for the below audit prior to the Ebola outbreak, the audit reinforces systems that will promote accountability in the expenditure of USAID funds related to Ebola.

Audit of USAID/Guinea's Systems for Ensuring Appropriate Oversight of Funded Programs (Report No. [7-675-15-003-P](#), November 6, 2014).

Contracts, grants, and cooperative agreements are the main tools USAID uses to provide its foreign assistance programs. Agency rules and regulations state that foreign NGOs spending more than \$300,000 in USAID funds during the fiscal year are required to have an annual financial audit, and those that spend more than \$500,000 throughout the award must have a close-out audit. To make sure the financial audits are monitored properly, USAID missions must maintain a list of all awards. USAID/Guinea's FY 2013 award list had 48 awards worth about \$135 million. Ten of them, worth \$6 million, were made to foreign organizations or the Guinean Government.

USAID OIG determined that USAID/Guinea did not manage its financial audit program effectively. For instance, a review of the mission's award list showed that 22 expired awards dating back to 1999 still appeared in the financial systems with an open status, which mission officials attributed, in part, to high staff turnover.

They said that certain close-out procedures, like negotiated indirect cost rate agreement audits, are the responsibility of USAID in Washington, D.C., and that employees there had not completed them on time.

In addition, the mission did not verify whether some audits were performed in accordance with Agency policies and submitted on time. In one example, an audit on an implementer was scheduled for completion in September 2013, but was actually finished in June 2014, 9 months later. In this case, mission officials said they believed that the prime recipient was responsible for verifying that audits of sub-recipients were conducted. They also said they did not know they needed to review the statement of work for a sub-recipient that spent more than \$300,000 of USAID funds within its fiscal year.

USAID made management decisions on each of USAID OIG's four recommendations.

Ongoing Work

As of March 31, 2015, USAID OIG had three audits underway that relate to USAID's management of medical commodities during the response, its decisions regarding acquisition and assistance instruments used, and the effectiveness of social mobilization, case detection, and case management efforts under a particular program. This work is being conducted by the Regional Inspector General Office in Dakar, and the Performance Audits Division based in Washington, D.C.

Audit of Selected Activities from USAID/Office of Disaster Assistance's Response to the Ebola Crisis in Liberia. The Assisting Liberians with Education to Reduce Transmission

program is intended to address several EVD Pillar 1 response needs in Liberia, which had received the highest level of humanitarian assistance provided by USAID for EVD response activities. Global Communities, the implementer for this program, is one of a small number of awardees to receive an award valued in excess of \$20 million to implement EVD response Pillar 1 activities. The organization operates in all 15 counties in Liberia and is responsive to emerging hotspots. The program's community outreach and prevention messaging, along with support for safe burial teams and contact tracing activities are significant elements in reducing the probability of a more rapid rate of EVD infection.

The objective of this audit is to determine whether the program is achieving its goal of assuring a maximum level of community preparedness for and responsiveness to exposure to Ebola through effective social mobilization, case detection, and case management.

Audit of USAID's Use of Acquisition and Assistance

Implementing Instruments in Responding to Ebola. This audit will provide a broad overview of how USAID brought implementing partners on board in response to a rapidly moving crisis. The audit will determine whether the acquisition and assistance instruments USAID used, and selected statements of work for those instruments, were appropriate for implementing USAID's Ebola response strategy.

Audit of USAID's Management of Commodities Provided in Response to the Ebola Outbreak. A crucial part of international community and U.S. Government response efforts is the provision of protective equipment, medical supplies, and other commodities. According to an October 2014 Congressional Research Service

report on U.S. and international health responses to the Ebola outbreak in West Africa, affected countries had limited supplies of protective equipment.⁴³¹ The equipment was reportedly primarily provided to treatment centers and not available to many community health workers or family members who provide treatment outside these centers. Even with the focus on treatment centers, WHO has still noted shortages in related equipment. To complicate matters, poor supply chain management practices, poor road conditions, border closures, and the suspension of commercial air services have reportedly also affect the supply and distribution of commodities to Ebola affected regions.

USAID has provided funds to purchase and distribute large volumes of commodities in various areas within Liberia. The commodity supply chain process can be subject to mismanagement during a crisis. This audit will help identify areas of vulnerability and help USAID to design and implement controls to mitigate these vulnerabilities during future crises. USAID OIG is conducting this audit to determine whether USAID made informed decisions in purchasing, distributing, and managing commodities to effectively respond to the Ebola outbreak.

Planned Work

USAID OIG plans to obtain and review mission and agency audit plans and lists of awards for USAID's Ebola programs to ensure that required financial audits are performed. These audits will determine whether funds appropriated for USAID Ebola initiatives are expended according to established laws, regulations, and cost principles, and auditors will test costs to determine whether they are allowable, allocable, and reasonable.

In addition, USAID OIG plans to examine pre-award reviews that USAID has done for recipients that do not have experience working with USAID, and then follow-up on related recommendations to determine whether needed corrective actions or mitigating steps have been taken. USAID OIG will examine implementer and program risk information in determining when to supplement standard organization-wide financial audits of U.S.-based entities and project-specific audits of international entities with additional targeted financial audit work.

Outreach Plans and Activities

USAID OIG established a dedicated Ebola Hotline to receive complaints of fraud, waste, or abuse relating to U.S. Government programs supporting the response to contain and stop the spread of EVD. The Hotline has also been made available to receive complaints relating to U.S. Government programs that support efforts to mitigate second-order impacts; ensure that disease outbreak response efforts have needed leadership and operational support; and strengthen global health security by increasing health system disease surveillance, laboratory, and infection control capacity. Complaints to the Ebola Hotline may include information about mismanagement or violations of law, rules, or regulations by U.S. Government employees, implementers of U.S. Government-funded programs, or program participants. USAID OIG accepts complaints directly from employees, program participants, or the general public. The Ebola Hotline is accessible through a web-based form on the USAID OIG webpage in English and in French as well as by telephone, fax, and mail.

Telephone: 1-800-230-6539 or 202-712-1023

Email: ebolahotline@usaid.gov

PDF form for fax or mail: http://oig.usaid.gov/sites/default/files/ebola_complaint_form.pdf

Fax: 202-216-3801

Mailing address:

U.S. Agency for International Development

Attn: Ebola Hotline

Office of Inspector General

P.O. Box 657

Washington, DC 20044-0657

Hotline Web site in English:

<http://oig.usaid.gov/content/ebola-hotline-report-fraud-or-corruption>

Hotline Web site in French:

<http://oig.usaid.gov/content/ebola-hotline-report-fraud-or-corruption-french>

USAID OIG has begun to receive information through the Ebola Hotline that has informed upcoming audit work. As allegations are received, USAID OIG will work with its partners in DoD, DOS, and HHS OIGs, and other domestic and international law enforcement partners as appropriate to investigate them. USAID OIG investigative work will be managed from headquarters in Washington, D.C., and assigned to investigators posted in Dakar, Pretoria, and Washington, D.C.

In March 2015, USAID OIG provided a fraud awareness briefing to Washington, D.C.-based USAID staff focused for the Ebola response. Plans are under way for USAID OIG personnel

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to provide targeted fraud awareness training to USAID staff, implementers, and local officials in West Africa. As USAID staff are recruited and trained, and programs are launched, USAID OIG will continue to offer guidance on vulnerability awareness and management.

APPENDIX A: SECTION 8L

§8L. Special Provisions Concerning Overseas Contingency Operations

(a) Additional Responsibilities of Chair of Council of Inspectors General on Integrity and Efficiency.—Upon the commencement or designation of a military operation as an overseas contingency operation that exceeds 60 days, the Chair of the Council of Inspectors General on Integrity and Efficiency shall, in consultation with the members of the Council, have the additional responsibilities specified in subsection (b) with respect to the Inspectors General specified in subsection (c).

(b) Specific Responsibilities.—The responsibilities specified in this subsection are the following:

- (1) In consultation with the Inspectors General specified in subsection (c), to designate a lead Inspector General in accordance with subsection (d) to discharge the authorities of the lead Inspector General for the overseas contingency operation concerned as set forth in subsection (d).
- (2) To resolve conflicts of jurisdiction among the Inspectors General specified in subsection (c) on investigations, inspections, and audits with respect to such contingency operation in accordance with subsection (d)(2)(B).
- (3) To assist in identifying for the lead inspector general for such contingency operation, Inspectors General and inspector general office personnel available to assist the lead Inspector General and the other Inspectors General specified in subsection (c) on matters relating to such contingency operation.

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(c) Inspectors General.—The Inspectors General specified in this subsection are the Inspectors General as follows:

- (1) The Inspector General of the Department of Defense.
- (2) The Inspector General of the Department of State.
- (3) The Inspector General of the United States Agency for International Development.

(d) Lead Inspector General for Overseas Contingency Operation.—

(1) A lead Inspector General for an overseas contingency operation shall be designated by the Chair of the Council of Inspectors General on Integrity and Efficiency under subsection (b)(1) not later than 30 days after the commencement or designation of the military operation concerned as an overseas contingency operation that exceeds 60 days. The lead Inspector General for a contingency operation shall be designated from among the Inspectors General specified in subsection (c).

(2) The lead Inspector General for an overseas contingency operation shall have the following responsibilities:

(A) To appoint, from among the offices of the other Inspectors General specified in subsection (c), an Inspector General to act as associate Inspector General for the contingency operation who shall act in a coordinating role to assist the lead Inspector General in the discharge of responsibilities under this subsection.

(B) To develop and carry out, in coordination with the offices of the other Inspectors General specified in subsection (c), a joint strategic plan to conduct comprehensive oversight over all aspects of the

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contingency operation and to ensure through either joint or individual audits, inspections, and investigations, independent and effective oversight of all programs and operations of the Federal Government in support of the contingency operation.

(C) To review and ascertain the accuracy of information provided by Federal agencies relating to obligations and expenditures, costs of programs and projects, accountability of funds, and the award and execution of major contracts, grants, and agreements in support of the contingency operation.

(D)

(i) If none of the Inspectors General specified in subsection (c) has principal jurisdiction over a matter with respect to the contingency operation, to exercise responsibility for discharging oversight responsibilities in accordance with this Act with respect to such matter.

(ii) If more than one of the Inspectors General specified in subsection (c) has jurisdiction over a matter with respect to the contingency operation, to determine principal jurisdiction for discharging oversight responsibilities in accordance with this Act with respect to such matter.

(E) To employ, or authorize the employment by the other Inspectors General specified in subsection (c), on a temporary basis using the authorities in section 3161 of title 5, United States Code, such auditors, investigators, and other personnel as the lead Inspector General considers appropriate to assist the lead Inspector General

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and such other Inspectors General on matters relating to the contingency operation.

(F) To submit to Congress on a bi-annual basis, and to make available on an Internet website available to the public, a report on the activities of the lead Inspector General and the other Inspectors General specified in subsection (c) with respect to the contingency operation, including—

- (i) the status and results of investigations, inspections, and audits and of referrals to the Department of Justice; and

- (ii) overall plans for the review of the contingency operation by inspectors general, including plans for investigations, inspections, and audits.

(G) To submit to Congress on a quarterly basis, and to make available on an Internet website available to the public, a report on the contingency operation.

(H) To carry out such other responsibilities relating to the coordination and efficient and effective discharge by the Inspectors General specified in subsection (c) of duties relating to the contingency operation as the lead Inspector General shall specify.

(3)

(A) The lead Inspector General for an overseas contingency operation may employ, or authorize the employment by the other Inspectors General specified in subsection (c) of, annuitants covered by section 9902(g) of title 5,

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United States Code, for purposes of assisting the lead Inspector General in discharging responsibilities under this subsection with respect to the contingency operation.

(B) The employment of annuitants under this paragraph shall be subject to the provisions of section 9902(g) of title 5, United States Code, as if the lead Inspector General concerned was the Department of Defense.

(C) The period of employment of an annuitant under this paragraph may not exceed three years, except that the period may be extended for up to an additional two years in accordance with the regulations prescribed pursuant to section 3161(b)(2) of title 5, United States Code.

(4) The lead Inspector General for an overseas contingency operation shall discharge the responsibilities for the contingency operation under this subsection in a manner consistent with the authorities and requirements of this Act generally and the authorities and requirements applicable to the Inspectors General specified in subsection (c) under this Act.

(e) Sunset for Particular Contingency Operations.—The requirements and authorities of this section with respect to an overseas contingency operation shall cease at the end of the first fiscal year after the commencement or designation of the contingency operation in which the total amount appropriated for the contingency operation is less than \$100,000,000.

(f) Construction of Authority.—Nothing in this section shall be construed to limit the ability of the Inspectors General specified in subsection (c) to enter into agreements to conduct joint audits,

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inspections, or investigations in the exercise of their oversight responsibilities in accordance with this Act with respect to overseas contingency operations.

(Pub. L. 95–452, §8L, as added Pub. L. 112–239, div. A, title VIII, §848(2), Jan. 2, 2013, 126 Stat. 1851.)

ACRONYMS

AEU	Africa Ebola Unit, United States Agency for International Development
ASPR	Office for the Assistant Secretary for Preparedness and Response, Department of Health and Human Services,
BARDA	Biomedical Advanced Research and Development Authority, Department of Health and Human Services,
CCC	Community Care Centers
CDC	Centers for Disease Control and Prevention, Department of Health and Human Services
COR	Contracting Officer's Representative
DARPA	Defense Advanced Research Projects Agency, Department of Defense
DART	Disaster Assistance Response Team, United States Agency for International Development
DHS	U.S. Department of Homeland Security
DoD	U.S. Department of Defense
DOS	U.S. Department of State
DRC	Democratic Republic of Congo
DTRA	Defense Threat Reduction Agency, Department of Defense
EOC	Emergency Operation Center
ESF	Economic Support Fund
ETU	Ebola Treatment Unit
EVD	Ebola virus disease
FY	Fiscal year
FDA	Food and Drug Administration, U.S. Department of Health and Human Services
GDP	Gross Domestic Product

ACRONYMS

HHS	U.S. Department of Health and Human Services
ICS	Incident Command System
IDA	International Disaster Assistance
IFRC	International Federation of Red Cross and Red Crescent Societies
IG	Inspector General
IG Act	Inspector General Act of 1978, as amended
IMS	Incident Management System
MOHSW	Ministry of Health and Social Welfare, Government of Liberia
MMU	Monrovia Medical Unit
MSF	Médecins Sans Frontières (Doctors Without Borders)
NGO	Nongovernmental organization
NIH	National Institutes of Health, U.S. Department of Health and Human Services
NIAID	National Institute of Allergy and Infectious Diseases, National Institutes of Health, U.S. Department of Health and Human Services
OFDA	Office of Foreign Disaster Assistance, United States Agency for International Development
OIG	Office of Inspector General
OHDACA	Overseas Humanitarian, Disaster Assistance, and Civic Aid
OMD	Office of the Medical Director, Department of State
OUA	Operation United Assistance
PPE	Personal Protective Equipment
RMT	Response Management Team

ACRONYMS

USAFRICOM	United States Africa Command, U.S. Department of Defense
USAID	United States Agency for International Development
UN	United Nations
UNICEF	United Nations Children's Fund
UNMEER	United Nations Mission for Ebola Emergency Response
USPHS	U.S. Public Health Service, U.S. Department of Health and Human Services
WFP	World Food Programme
WHO	World Health Organization

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TO REPORT FRAUD, WASTE, OR ABUSE RELATED TO EBOLA PROGRAMS AND OPERATIONS, CONTACT:

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Department of State Hotline
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Department of Health and Human Services
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