



USAID OFFICE OF  
INSPECTOR GENERAL



HHS OFFICE OF  
INSPECTOR GENERAL

Quarterly Progress Report on  
**U.S. GOVERNMENT  
INTERNATIONAL EBOLA RESPONSE  
AND PREPAREDNESS ACTIVITIES**



Fiscal Year 2016, Second Quarter

| March 31, 2016

*Community members dance in front of the CMC Flamboyant Health Hospital in Guinea, a hospital renovated by USAID partner Health Communication Capacity Collaborative Project. (Photo by Issiaga Daffe, Johns Hopkins University Center for Communication Programs, February 2016)*

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# EXECUTIVE SUMMARY

The Ebola virus disease (EVD) outbreak in West Africa reached a turning point during the quarter when the World Health Organization (WHO) declared the outbreak was no longer an international public health emergency in March 2016. While WHO reported that the original chains of EVD transmission had been interrupted in the three most affected countries in West Africa—Guinea, Liberia, and Sierra Leone—and that the risk of international spread of EVD was low, WHO also cautioned that new clusters of EVD cases were likely to emerge. According to WHO, the three countries have the detection and response capacities to effectively manage new EVD cases and when EVD clusters appeared during the quarter, host-nation authorities responded rapidly with support from the international community.

The United States continued to provide support for Ebola response and preparedness efforts while transitioning response activities to recovery efforts in each country. U.S. Government agencies reported \$92.4 million in new obligations and \$197.5 million in new disbursements toward international Ebola response, preparedness, and recovery activities during the quarter. The U.S. Agency for International Development (USAID), the U.S. Government’s lead for Ebola response, reported six new awards during the reporting period.

On January 4, 2016, USAID deactivated its emergency response operations in the field and in Washington, D.C., while the Centers for Disease Control and Prevention (CDC) deactivated its emergency operations center on March 31, 2016. Both CDC and USAID continued to support Guinea, Liberia, and Sierra Leone in responding to new outbreaks through their country program offices and by building the rapid response capacity in the three countries.

CDC and USAID also continued work to restore essential health services and advance health systems recovery through efforts to strengthen infection prevention and control in health facilities, support immunization activities, rehabilitate health centers, and provide technical assistance to Ministries of Health. CDC and USAID reported progress in strengthening global health security during the quarter. Whereas CDC focused on strengthening public health infrastructure to assist countries in rapidly detecting, preventing, and responding to infectious disease threats, USAID assisted countries with early detection of new disease threats, enhancing national preparedness and response capacities, and reducing risky practices and behaviors that can trigger the emergence of new diseases.

The Inspector General community continued to provide oversight and promote accountability of U.S. Government activities related to EVD response and preparedness. The USAID Office of Inspector General (OIG) issued an audit related to Food for Peace programs in Liberia and Sierra Leone and found that the programs had started to help vulnerable people meet their food needs and recover from the Ebola crisis. However, USAID OIG found that the programs were not on track to address food insecurity resulting from Ebola to

## NUMBERS AT A GLANCE

**\$2.63 billion**

Cumulative  
U.S. Government obligations

**\$1.47 billion**

Cumulative  
U.S. Government  
disbursements

**11**

Number of new confirmed  
Ebola cases reported to WHO  
during the quarter

**599**

Number of days the EVD  
outbreak in West Africa was  
declared a “public health  
emergency of international  
concern” by WHO

**8**

Number of ongoing Ebola-  
related audits and reviews by  
the OIGs for DoD, DHS, DOS,  
GAO, HHS, and USAID at the  
end of the reporting period

the intended extent because the programs were months behind schedule. The Department of Homeland Security (DHS) OIG also issued an audit on DHS' response to the Ebola outbreak. DHS OIG found that DHS had not ensured sufficient coordination, adequate training, or consistent screening during its Ebola response effort. DHS OIG also reported that some passengers with a risk of EVD may have entered the United States without adequate screening and that the DHS employees were not always appropriately protected from risks of infection.



## Ebola Outbreak in West Africa

On March 29, 2016, the WHO Director-General declared that the EVD outbreak in West Africa was no longer a “public health emergency of international concern.”<sup>1</sup> According to WHO, all three of the most affected countries in West Africa – Guinea, Liberia, and Sierra Leone – had interrupted their original chains of Ebola virus transmission.<sup>2</sup> However, WHO reiterated the possibility of new clusters of Ebola cases to occur given the detection of ten small EVD outbreaks between March and November 2015.<sup>3</sup>

A country needs to achieve a 42-day period with no new cases of the disease in order to be declared Ebola virus-free by WHO.<sup>4</sup> Sierra Leone, Guinea, and Liberia were declared free of EVD-transmission by WHO in November 2015, December 2015, and January 2016, respectively, but all three countries experienced setbacks during the quarter when new EVD cases emerged.<sup>5</sup> By the end of the reporting period, Guinea and Liberia had active EVD cases while Sierra Leone was declared free of EVD-transmission once again.<sup>6</sup>

According to USAID, eleven new confirmed, probable, and suspected cases and nine deaths in Guinea, Liberia, and Sierra Leone were reported during the quarter.<sup>7</sup> Since the start of the EVD outbreak in West Africa, 28,612 confirmed, probable, and suspected cases and 11,309 deaths had been reported in these three countries, as of March 31, 2016.<sup>8</sup>

On January 14, 2016, WHO declared the end of human-to-human transmission of EVD in Liberia.<sup>9</sup> On the same day, a new case of EVD was reported in Sierra Leone, which had been previously declared free of EVD transmission on November 7, 2015.<sup>10</sup> The new cluster resulted in two EVD cases in Sierra Leone.<sup>11</sup>



Figure 1. Cumulative EVD case counts by country, as of March 31, 2016. (Source: USAID and WHO)

During the quarter, the Sierra Leone Ministry of Health (MOH) coordinated response efforts as the nation’s designated response authority had transitioned from the Ministry of Defense to MoH in January 2016.<sup>12</sup> The Government of Sierra Leone also altered its strategy for regional EVD isolation and treatment from establishing national Ebola treatment units (ETUs) and a mobile unit to the creation of regional treatment centers for EVD and other diseases.<sup>13</sup> WHO declared the end of human-to-human transmission of EVD in the country once again on March 17, 2016.<sup>14</sup>

On the same day that Sierra Leone was declared free of EVD transmission, two new confirmed cases and three probable cases of EVD were reported in Guinea, the first new cases since WHO declared the country free of EVD transmission on December 29, 2015.<sup>15</sup> Subsequently, Guinea reported three more confirmed cases.<sup>16</sup> The Government of Guinea and response partners enacted micro-cerclage strategy in Koropara, the site of new EVD cases.<sup>17</sup> Using this strategy, authorities regulated the movement of identified contacts, conducted active case findings among approximately 1,500 families, and investigated illnesses and deaths within the past 21 days.<sup>18</sup> At the same time, WHO vaccinated more than 670 primary and secondary contacts.<sup>19</sup> According to CDC, national level responses were swift and effective but there were challenges associated with community level resistance and the coordination of response actors.<sup>20</sup>

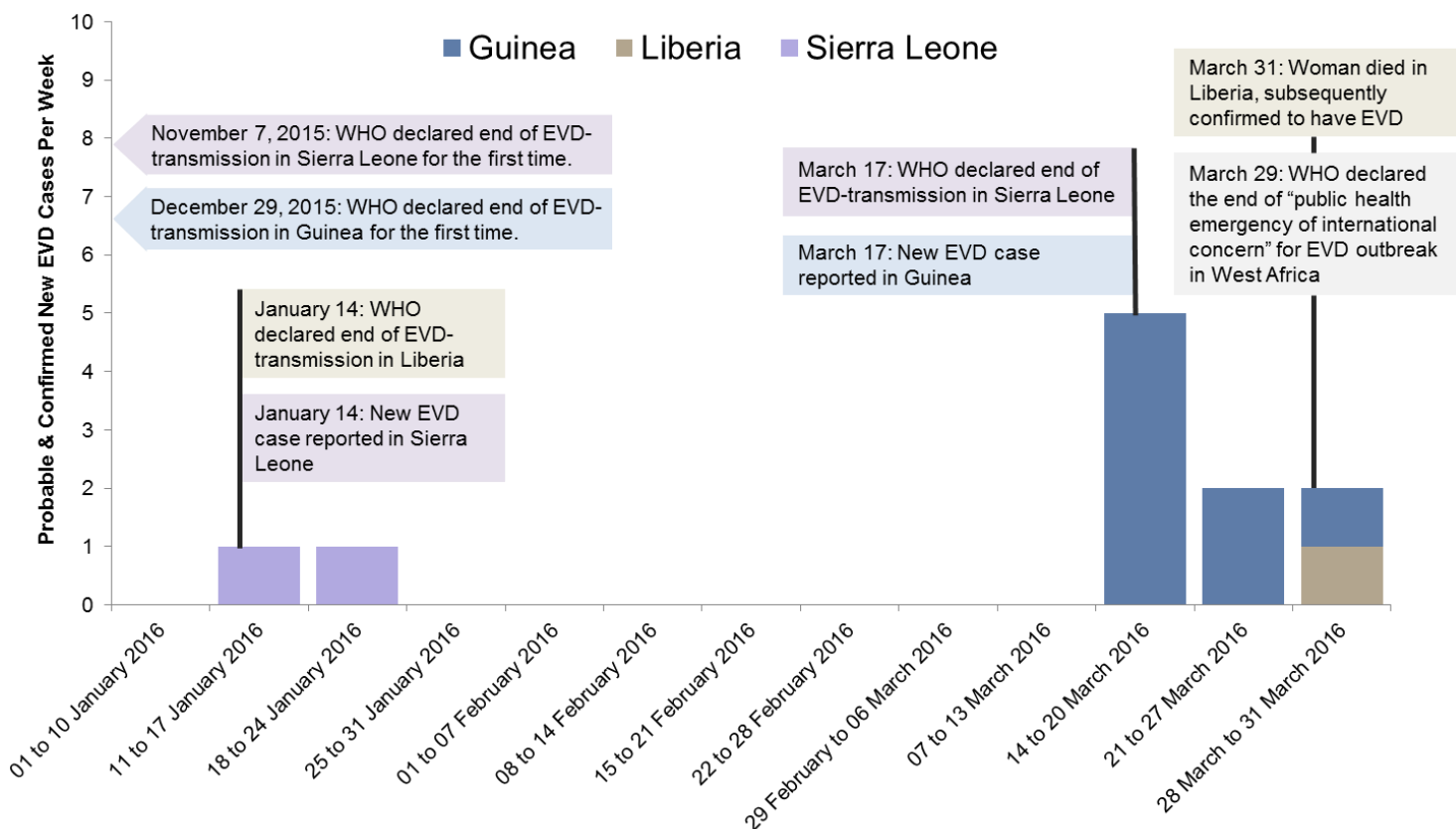


Figure 2. Reported new confirmed and probable EVD cases per week, January–March 2016. (Source: USAID and WHO)

In response to the new EVD cases in Guinea and to limit potential spread, Liberia closed its border with the country.<sup>21</sup> Notwithstanding this effort, at the end of the quarter, Liberia experienced its third flare-up of the disease when a new EVD case was confirmed in a woman who had died on March 31, 2016, after her recent travel to Guinea.<sup>22</sup>

According to WHO, Guinea, Liberia, and Sierra Leone have the detection and response capacities to effectively manage new EVD cases and the countries have responded rapidly to contain recent EVD outbreaks.<sup>23</sup> At its March 29, 2016, meeting, the WHO emergency committee convened by the WHO Director-General stated that the risk of international spread of EVD was low.<sup>24</sup> Yet response organizations still faced challenges in maintaining EVD response capacity in these countries. According to CDC, challenges to response efforts included difficulty recruiting French-speaking staff to deploy to Guinea and claims by elected officials in Sierra Leone that the recent cluster of cases was not due to EVD, while USAID reported community resistance and low levels of trust in authorities as major challenges in all three countries.<sup>25</sup>

## U.S. Government Response to the Ebola Outbreak

The U.S. Government applied a whole-of-government approach to EVD outbreak response and preparedness efforts. USAID was designated as the lead federal agency to manage and coordinate the U.S. effort overseas while CDC led the medical and public health components of the response.<sup>26</sup> Other federal agencies, such as the Department of Defense (DoD), the Department of State (DOS), the Food and Drug Administration (FDA), the Department of Health and Human Services (HHS) Office of the Assistant Secretary for Preparedness and Response (ASPR) and Biomedical Advanced Research and Development Authority (BARDA), National Institutes of Health (NIH), and the U.S. Public Health Service, also made significant contributions to the overall U.S. response.

On January 4, 2016, USAID deactivated the West Africa Ebola Disaster Assistance Response Team (DART) and the corresponding Washington, D.C.-based Response Management Team (RMT), which had led U.S. Government efforts to control the EVD outbreak in Guinea, Liberia, and Sierra Leone since August 5, 2014.<sup>27</sup> USAID's Office of U.S. Foreign Disaster Assistance continued coordinating and managing humanitarian responses to the EVD outbreak through country program offices.<sup>28</sup> CDC deactivated its Emergency Operations Center for Ebola on March 31, 2016.<sup>29</sup> The CDC Emergency Operations Center for Ebola was initially activated on July 9, 2014.<sup>30</sup>

The U.S. Government's strategy for EVD outbreak response and preparedness 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, and (4) strengthening global health security.<sup>31</sup>

According to USAID, U.S. Government Ebola response and preparedness efforts transitioned from controlling the outbreak to recovery efforts following the deactivation of the DART and

RMT.<sup>32</sup> Many response activities to control EVD concluded during the quarter, while recovery and global health security activities continued with the announcement of one new award for recovery efforts.

## Funding Response, Preparedness, and Recovery Efforts

As of March 24, 2016, the United States remained the largest international financial contributor to EVD outbreak response efforts according to information from USAID and the United Nations Office for the Coordination of Humanitarian Affairs.<sup>33</sup> U.S. Government commitments to these efforts were greater than the amounts provided by the next nine leading donors combined.<sup>34</sup>

Congress provided more than \$5.370 billion in emergency funds for Ebola prevention and response to several federal agencies as part of the Fiscal Year (FY) 2015 omnibus appropriation (P.L. 113-235, December 16, 2014). Of the total amount provided, \$3.726 billion was specifically designated for international efforts, with an additional \$532 million for use in either domestic or international settings.<sup>35</sup> While appropriations to USAID and DOS have a clear tie to international activities, funds appropriated to HHS and DoD were made available for either domestic or international work.<sup>36</sup> Funding that supports vaccine and therapeutic drug development, for example, may be used in the United States or abroad. As shown in Table 1, Congress made funds that it provided for Ebola preparedness and response available over different periods of time.<sup>37</sup>

**Table 1: Availability of Ebola-related funding for U.S. agencies:**

DoD	Procurement	FY 2017
	Research, Development, Test and Evaluation	FY 2016
DOS	Diplomatic and Consular Programs	FY 2016
	Economic Support Funds	FY 2016
	Nonproliferation, Anti-Terrorism, Demining and Related Programs	FY 2016
HHS	CDC	FY 2019
	FDA	Available until expended
	NIH	FY 2016
	Public Health and Social Services Emergency Fund	FY 2019
USAID	Economic Support Funds	FY 2016
	Global Health	Available until expended
	International Disaster Assistance	Available until expended
	Operating Expenses	FY 2016

While Congress required HHS to provide notification of uses of funding on a quarterly basis, it mandated that USAID and DOS provide monthly reports on the proposed use of appropriated Ebola preparedness and response funds through at least September 30, 2016.<sup>38</sup>

Overall, as shown in Table 2, U.S. Government agencies had obligated about \$2.63 billion towards these efforts as of March 31, 2016. Available information on U.S. Government Ebola-related spending indicates that approximately \$1.47 billion had been disbursed by this date. As a share of total obligations, these disbursements accounted for approximately 56 percent. U.S. Government agencies reported \$92.5 million in new obligations and \$197.5 million in new disbursements toward international Ebola response, recovery, and preparedness activities during the quarter.

In reviewing the following table, note that DOS and USAID were unable to provide updated obligation and disbursement information through the end of the reporting period at the time of this report's publication. DOS and USAID figures reflect conditions as of March 1, 2016.

**Table 2. Ebola-related International Appropriations, Obligations, and Disbursements as of March 31, 2016 (unaudited, in millions of dollars)**

Department / Agency Account	Appropriated <sup>†</sup>			Total	Obligated	Disbursed
	FY 2013	FY 2014	FY 2015		FY 2014 16	FY 2014 16
<b>DoD<sup>‡</sup></b>	<b>18.9</b>	<b>611.8</b>	<b>124.0</b>	<b>754.8</b>	<b>648.7</b>	<b>440.4</b>
<i>Overseas, Humanitarian, Disaster Assistance, &amp; Civic Aid</i>	-	485.0	-	485.0	431.7	310.8
<i>Cooperative Threat Reduction</i>	15.5	69.6	-	85.1	49.6	42.2
<i>Research, Development, Test &amp; Evaluation</i>	3.4	57.1	107.0	167.6	150.4	80.2
<i>Procurement</i>	-	-	17.0	17.0	16.9	7.2
<i>Operations &amp; Maintenance</i>	-	<0.1	-	<0.1	<0.1	<0.1
<b>DOS</b>	<b>-</b>	<b>-</b>	<b>46.7</b>	<b>46.7</b>	<b>32.4</b>	<b>9.9</b>
<i>Diplomatic &amp; Consular Programs</i>	-	-	36.4	36.4	22.1	9.0
<i>Nonproliferation, Anti-Terrorism, Demining, and Related Programs</i>	-	-	5.3	5.3	5.3	0.9
<i>Economic Support Fund</i>	-	-	5.0	5.0	5.0	-
<b>HHS</b>	<b>-</b>	<b>33.2</b>	<b>1,621.4</b>	<b>1,654.6</b>	<b>752.2</b>	<b>282.0</b>
<i>CDC</i>	-	-	1,200.0 <sup>§</sup>	1,200.0 <sup>§</sup>	364.4	174.5
<i>NIH</i>	-	33.2 <sup>††</sup>	238.0 <sup>††</sup>	271.2 <sup>††</sup>	215.0	69.6
<i>Public Health &amp; Social Services Emergency Fund</i>	-	-	157.0 <sup>††</sup>	157.0 <sup>††</sup>	160.5	32.8
<i>FDA</i>	-	-	26.4 <sup>††</sup>	26.4 <sup>††</sup>	12.3	5.1
<b>USAID<sup>††</sup></b>	<b>-</b>	<b>-</b>	<b>2,479.6</b>	<b>2,479.6</b>	<b>1,200.6</b>	<b>737.6</b>
<i>International Disaster Assistance</i>	-	-	1,436.3 <sup>§§</sup>	1,436.3	899.4	683.0
<i>Economic Support Fund</i>	-	-	706.7 <sup>§§</sup>	706.7	127.9	45.8
<i>Global Health Programs</i>	-	-	312.0	312.0	166.4	5.3
<i>Operating Expenses</i>	-	-	19.0	19.0	4.4	1.6
<i>OIG</i>	-	-	5.6	5.6	2.4	1.9
<b>TOTAL</b>	<b>18.9</b>	<b>645.0</b>	<b>4,271.7</b>	<b>4,935.7</b>	<b>2,633.8</b>	<b>1,469.8</b>

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

Note: Amounts may not add due to rounding.

† Appropriation figures include funds that were originally appropriated to other accounts or for other purposes (such as funding appropriated in FYs 2013 and 2014) that was later realigned or reprogrammed to support Ebola response activities. These figures do not include funds specifically appropriated for domestic Ebola preparedness and response.

‡ DoD management asserted to DoD OIG that the DoD FY 2015, 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 2015, FY 2014, and FY 2013 Basic Financial Statements. Thus, the basic financial statements may have undetected misstatements that are both material and pervasive.

FY2015 appropriated amounts for DoD Research, Development, Test & Evaluation was decreased by \$15.8 million due to contract termination.

Previously reported amounts appropriated under the Overseas, Humanitarian, Disaster Assistance, & Civic Aid account include \$265 million that was realigned to support other humanitarian assistance, disaster relief efforts, and pandemic response initiatives during FY 2015.

DoD acknowledged that previous reporting overstated obligation and disbursement amounts, and the revised obligation and disbursement amounts were based on updated reporting.

Funds were de-obligated under Cooperative Threat Reduction and Research, Development, Test & Evaluation for projected requirements that did not materialize, and DoD reallocated previously appropriated funds accordingly.

§ CDC received \$1.77 billion in appropriations for Ebola activities inside and outside the United States in the December 2014 Consolidated and Further Continuing Appropriations Act, \$1.2 billion of which was specifically designated for international use. In addition to the \$364.4 million that CDC had obligated toward international Ebola response and preparedness activities as of March 31, 2016, CDC reported that it had obligated \$459.9 million for activities inside the United States.

†† Includes funding for possible domestic or international use

‡‡ USAID figures reflect obligations and disbursements as of March 1, 2016. Reported appropriations, obligations, and disbursements for USAID do not reflect spending on pre-existing programs and activities in countries affected by the EVD outbreak that were substantially modified in response to the outbreak.

§§ These totals include past 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 used \$29.7 million in Ebola emergency Economic Support Funds to reimburse prior year accounts for pre-enactment obligations.

As Figure 3 illustrates, by the end of the reporting period, USAID had accounted for the largest share of U.S. Government obligations for international preparedness and response efforts, with 46 percent, followed by HHS with 28 percent, DoD with 25 percent, and DOS with 1 percent.

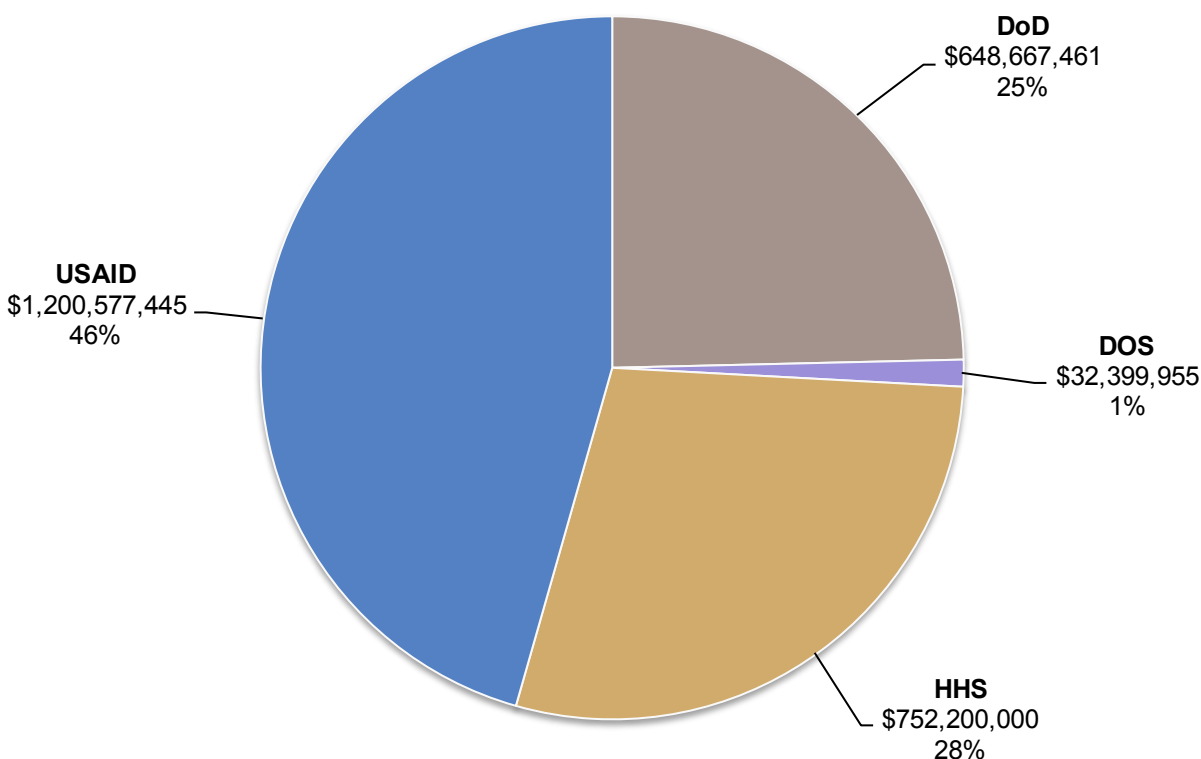


Figure 3. U.S. Government Obligations for International Ebola Efforts by U.S. Agency, as of March 31, 2016. Note: percentages affected by rounding. (Source: DoD OIG, DOS OIG, HHS OIG, USAID Office of Budget and Resource Management)

HHS reported the largest amount of new obligations, with \$79.4 million, an increase of approximately 12 percent over the previous quarter, with CDC accounting for the largest share of this total with \$59.0 million. USAID reported \$12.7 million and DOS reported \$300,000 in additional obligations through March 1, 2016. While DoD reported \$73,328 in new obligations during the quarter, \$17.1 million in funds related to Research, Development, Test and Evaluation were also deobligated.

DOS and USAID tracks its project spending in line with the U.S. Government strategy for Ebola preparedness and response. As of March 1, 2016, DOS reported \$32.4 million in obligations while USAID reported \$1.20 billion in obligations in support of Ebola response, preparedness, and recovery efforts. Of USAID's total, about \$800.6 million or approximately 67 percent, was associated with activities to control the EVD outbreak and was the initial focus of USAID programming. Outbreak control activities also accounted for the largest share of USAID disbursements, with 83 percent of USAID's Ebola-related disbursements through March 1, 2016.<sup>39</sup>



U.S. activities to mitigate second order impacts and strengthen global health security accounted for 16 percent each, respectively, of obligations, which remained the same over the past three quarters, as Figure 4 illustrates. Activities to build coherent leadership and operations were associated with 1 percent of total USAID obligations through the end of the reporting period, which is consistent with USAID plans on internal operating expenses.

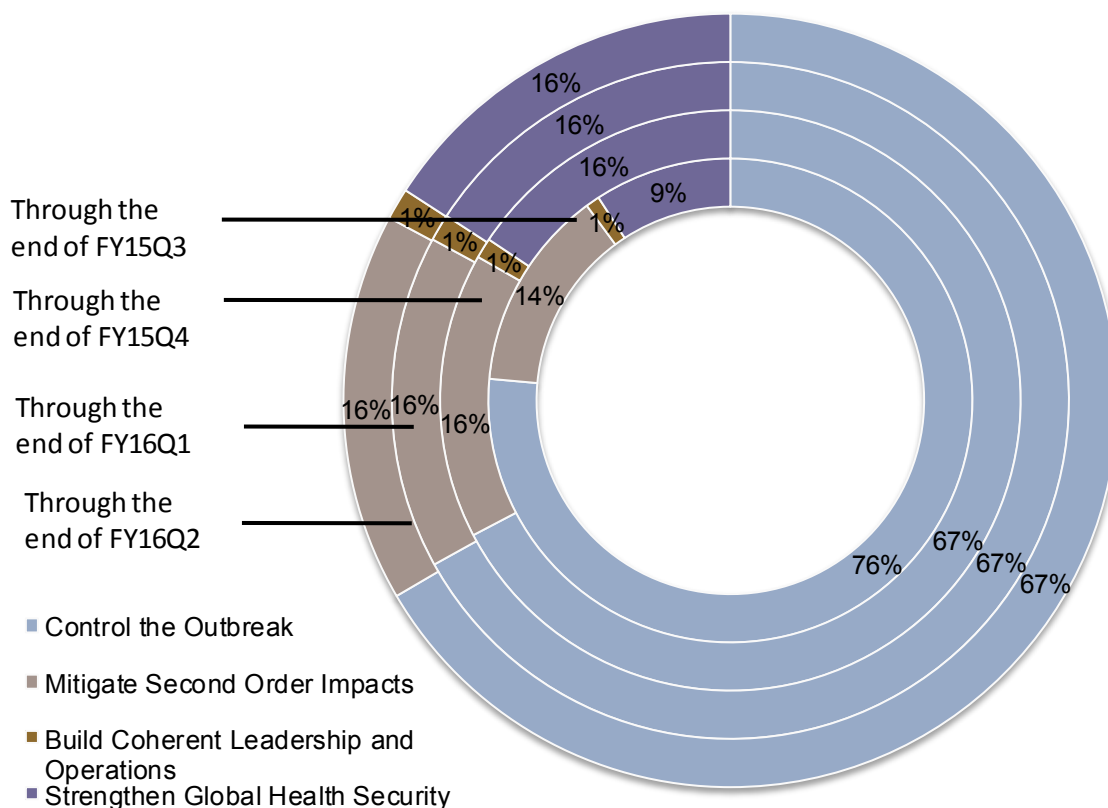


Figure 4. USAID Obligations by Strategy Pillar and Quarter, as of March 1, 2016. (Source: USAID Office of Budget and Resource Management)

## U.S. Government Efforts to Control the Outbreak

To halt EVD transmission in West Africa, the U.S. Government supported enhanced EVD control measures such as contact tracing, EVD surveillance, safe burial teams, behavior change, community outreach, and social mobilization efforts.<sup>41</sup> The U.S. Government also constructed ETUs to assist in the management of EVD cases by isolating and treating suspected, probable, and confirmed EVD patients. Removing these patients from the community prevented future infections.<sup>42</sup> By the end of this quarter, no operational ETUs were supported by USAID.<sup>43</sup> USAID-supported, French Red Cross-managed ETU in Forécariah, Guinea, remained on standby, however, with the capacity to reactivate within 48 hours.<sup>44</sup> ETUs managed and funded by host governments and other donors were still operational and available to respond to new cases.<sup>45</sup>

During the quarter, CDC reported that it responded to new cases with contact tracing and

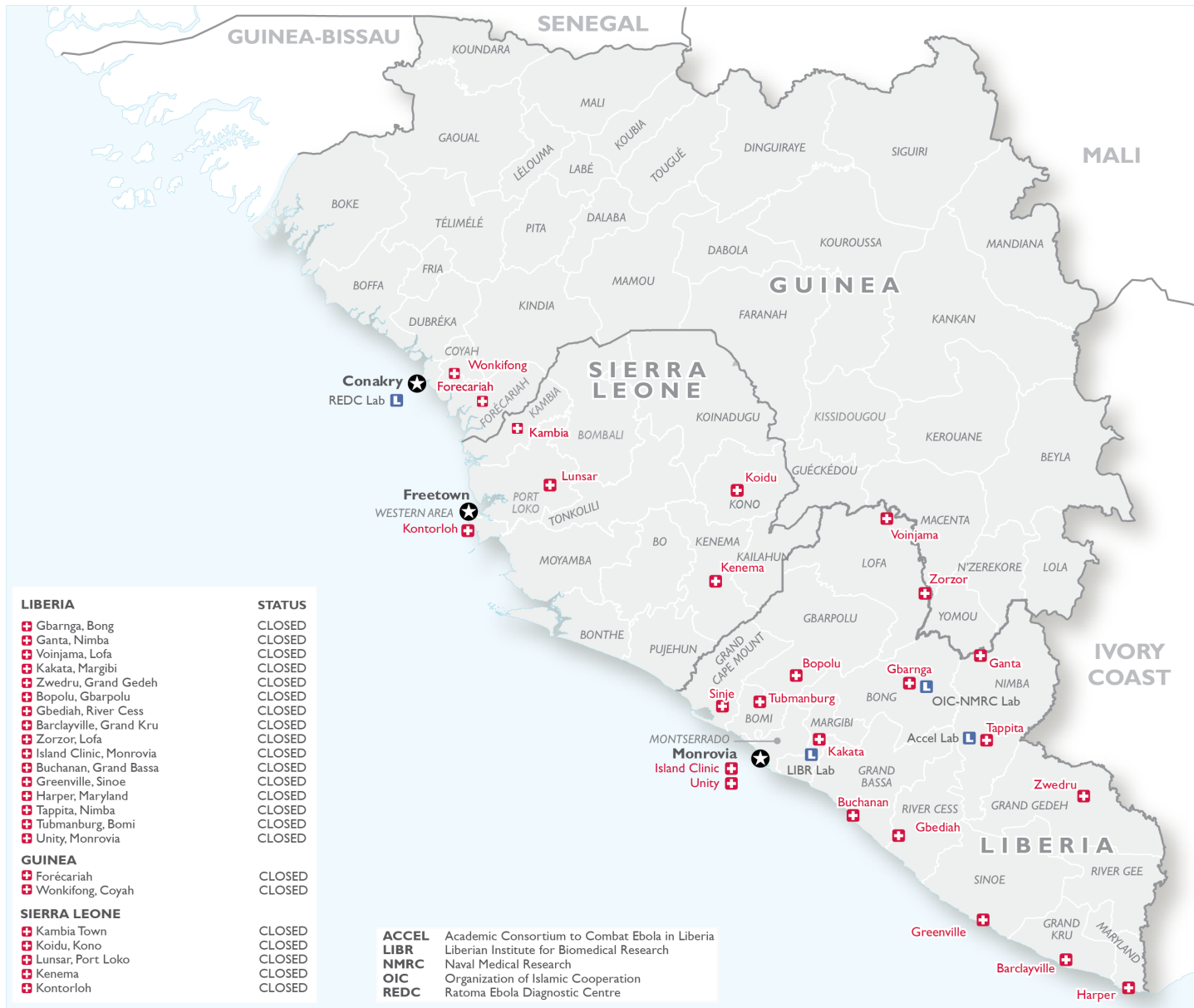


Figure 5. Location of U.S. Government-supported ETUs and laboratories in Guinea, Liberia, and Sierra Leone, as of April 1, 2016. (Source: USAID, 2016)

surveillance activities, as well as by building and maintaining the emergency response capacity developed during the EVD outbreak.<sup>46</sup> These efforts included building emergency management capacity, strengthening laboratory testing, developing rapid diagnostics tests, providing public health training, and supporting the availability of medical countermeasures.<sup>47</sup> For example, during the quarter, CDC supported the development of disease surveillance plans and training materials in Guinea, as well as the implementation of general disease surveillance at the community and health center levels in Liberia and Sierra Leone.<sup>48</sup>

Meanwhile, USAID continued with transition efforts and reported that the majority of the equipment and supplies procured for the response had been transferred to organizations to implement USAID and other U.S. Government funded or related health activities.<sup>49</sup> For example in Liberia, USAID staff reportedly facilitated the transfer of IPC supplies and vehicles from

response partners to residual response and other USAID mission partners.<sup>50</sup> According to USAID, challenges to transition efforts included communication and coordination between the disparate partners involved, and adapting plans to meet changing recovery initiatives.<sup>51</sup>

## GUINEA

During the quarter, the Government of Guinea rolled out community event-based surveillance (CEBS) activities nationwide, such as community-level epidemiological data collection and management, to engage communities to identify and report EVD cases.<sup>52</sup> USAID reported committing \$3.4 million in additional funding to International Medical Corps (IMC) during the quarter to support CEBS activities, including the launch of CEBS activities in Conakry Prefecture in January 2016.<sup>53</sup> The next month, USAID partner International Organization for Migration (IOM) commenced CEBS activities in Conakry Prefecture as well.<sup>54</sup>

Additionally in Guinea, USAID reported committing \$3.3 million in additional funding to the United Nations World Food Program to provide logistics support for rapid response capacity and \$3.1 million in additional funding to IMC to provide residual rapid response capacity in the form of four rapid response teams.<sup>55</sup> The multidisciplinary teams are able to quickly deploy to respond to new EVD cases and conduct case management activities, such as rapid isolation and treatment of new EVD patients, contact tracing, safe burials, the provision of psychosocial support, and community mobilization, according to USAID.<sup>56</sup>

When new EVD cases emerged in Guinea in March 2016, CDC and USAID coordinated with the National Ebola Coordination Cell and other response partners to provide assistance.<sup>57</sup> USAID partner IOM reportedly installed more than 20 additional EVD screening checkpoints along the border with Liberia and Sierra Leone to screen visitors and conduct EVD surveillance, while another USAID partner, Catholic Relief Services, reinforced infection prevention and control (IPC) efforts at health facilities by providing supplies, training health staff, and distributing information.<sup>58</sup>

## LIBERIA

In Liberia, USAID committed nearly \$8.7 million in funding



Water, sanitation and hygiene sign at the CMC Flamboyant Hospital in Nongo-Nongo Tady, Guinea. (Photo by Mariama Keita, USAID, March 1, 2016)

to develop a national epidemic preparedness and response (EPR) consortium.<sup>59</sup> Led by the International Rescue Committee (IRC) and consisting of seven other partner organizations, the EPR consortium was launched in January 2016 to support Liberia's rapid response capacity through December 2016.<sup>60</sup> During the quarter, the EPR consortium mapped its partners' areas of operations and planned activities to identify gaps and prevent duplication, and planned rapid response training.<sup>61</sup>

The transition from response to recovery continued during the quarter in Liberia as facilities used during the response were transferred to government authorities. On February 1, 2016, management and operational support responsibilities for the Disco Hill national burial site was transferred from USAID partner Global Communities to Liberia's MOH, which planned to continue safe burials and dispose of hazardous medical waste at the site.<sup>62</sup> Since the site commenced operations in December 2014, Global Communities conducted approximately 2,600 burials at the site with USAID support.<sup>63</sup> Also during the quarter, eleven county-level emergency operations centers supported by CDC transitioned to the MOH and were integrated with the county health teams.<sup>64</sup>

On March 16, 2016, Liberia's MOH launched the electronic disease early warning system (eDEWS), an electronic platform for healthcare workers to monitor and quickly report potential public health threats.<sup>65</sup> USAID supported the piloting of eDEWS in 75 healthcare facilities, with plans by the MOH to complete eDEWS rollout countrywide by late 2016.<sup>66</sup>

When new EVD cases appeared in neighboring Guinea in the middle of March 2016, the county health teams in Bong and Nimba counties in Liberia strengthened EVD surveillance in border communities.<sup>67</sup> The

Nimba county health team also reactivated its rapid response team, commenced daily border patrols, and sensitized community health volunteers on EVD screening and prevention.<sup>68</sup> When new EVD cases appeared in Liberia at the end of March 2016, CDC provided technical support for response efforts, such as response coordination, IPC, and epidemiology.<sup>69</sup> In addition, CDC worked



*At the Disco Hill safe burial site in Margibi, Liberia, graves are in neat and dignified rows. (Photo by USAID OIG Regional Inspector General/ Dakar, March 2015)*

with the MOH in Guinea and Liberia to investigate potential links between the two clusters.<sup>70</sup> Meanwhile, USAID supported enhanced IPC efforts in eight health facilities in the affected area.<sup>71</sup>

## SIERRA LEONE

When new EVD cases were confirmed in Sierra Leone in January 2016, CDC and USAID staff coordinated with the Government of Sierra Leone on emergency response efforts.<sup>72</sup> A rapid response team, including representatives from CDC and USAID partner IRC, travelled to the affected districts in Sierra Leone to support district and local response efforts.<sup>73</sup> In addition, CDC supported emergency response coordination and the development of case management plans, assisted with contact tracing and surveillance activities in five districts, and reviewed IPC practices in healthcare facilities in the affected and proximate area.<sup>74</sup> USAID also reported committing \$3 million in additional funding to IRC to support CEBS activities in the country.<sup>75</sup>

During the quarter, USAID partner IMC decommissioned a USAID-supported ETU in the Kambia district on February 26, 2016.<sup>76</sup> The ETU had treated 35 confirmed EVD patients and screened nearly 300 patients for the disease.<sup>77</sup> In addition, USAID partner United Nations Children's Fund transferred six EVD-related isolation and care facilities in Bombali and Kambia to district health management teams in January 2016 for repurposing into non-EVD structures.<sup>78</sup>

### EVD VACCINES AND THERAPEUTIC CANDIDATES

The U.S. Government supported the preclinical development and subsequent clinical trials to evaluate the safety and efficacy of several EVD vaccine and therapeutic candidates in the United States and West Africa.<sup>79</sup> CDC and NIH both collaborated with Guinea, Liberia, and Sierra Leone to support the Partnership for Research on Ebola Virus in Liberia (PREVAIL I) study.<sup>80</sup> PREVAIL I enrolled 1,500 volunteers in Guinea, Liberia, and Sierra Leone to test the safety of and the immune system response to the National Institute of Allergy and Infectious Diseases (NIAID) / GlaxoSmithKline cAd3-EBOZ and NewLink Genetics/Merck rVSV-ZEBOV vaccine candidates.<sup>81</sup> In February 2016, NIAID released PREVAIL I results that showed both vaccine candidates were safe and produced an immune response.<sup>82</sup> In addition, when new EVD cases emerged in West Africa during the quarter, BARDA and the PREVAIL team supported the mobilization of the rVSV-ZEBOV vaccine candidate to the region in support of ring vaccination efforts to contain the outbreak.<sup>83</sup>

In February 2016, the NIH-supported PREVAIL II study to assess the effectiveness of ZMapp, a therapeutic drug, was halted due to the lack of EVD cases.<sup>84</sup> NIH reported that 72 subjects had been enrolled in the trial as of January 29, 2016, and initial results released in February 2016 indicated that ZMapp "was well tolerated and showed promise as a treatment for Ebola".<sup>85</sup> The PREVAIL study team also assisted in providing ZMapp to EVD patients after the study was halted.<sup>86</sup>

Please refer to Appendix A for more information on U.S. Government support for EVD diagnostic tools and medical countermeasures.



*CMC Flamboyant Hospital ceremony with community healthcare workers and local government leaders honoring the rapid rehabilitation of health structures by USAID partner Health Communication Capacity Collaborative Project. (Photo by Mariama Keita, USAID, February 24, 2016)*

## U.S. Government Recovery Efforts to Mitigate Second-Order Impacts

### FOOD SECURITY

The USAID-supported Famine Early Warning Systems Network (FEWS NET) reported that although the level of food insecurity in most of Guinea and Liberia were at the minimal level during the quarter, there were small areas in which up to 20 percent of their respective populations remained at stressed level. In Sierra Leone, by contrast, most of the country remained stressed.<sup>87</sup> According to FEWS NET, areas considered to be stressed have at least one in five households with “minimally adequate food consumption [and] are unable to afford some essential non-food expenditures without engaging in irreversible coping strategies.”<sup>88</sup>

USAID partners continued responding to food insecurity by focusing their activities on cash transfers, cash for work programs, and agricultural input vouchers intended to boost market recovery.<sup>89</sup> The provision of in-kind food was no longer a point of focus as people were able to move freely and able to access food in markets.<sup>90</sup>

USAID reported cash liquidity as a major challenge in addressing food insecurity during the quarter. According to USAID, banks struggled to maintain proper staffing in areas outside of the

capital cities and banks had problems ensuring that enough cash was available for distribution.<sup>91</sup> To mitigate these challenges, USAID partners reportedly invested significant time negotiating with banks to ensure cash distributions to beneficiaries or conducted cash distribution themselves.<sup>92</sup>

## HEALTH SYSTEMS AND CRITICAL NON-EBOLA HEALTH SERVICES

In addition to assisting Guinea, Liberia, and Sierra Leone in responding to new EVD cases during the quarter, CDC and USAID continued efforts to strengthen IPC protocols in health facilities, restore key non-Ebola health services (such as immunization) to pre-Ebola levels, and provide technical assistance to the MOHs in the three countries. In Guinea, USAID also rehabilitated a health center to restore trust and reinvigorate demand for health services.<sup>93</sup>

The U.S. Government supported the strengthening and integration of IPC capabilities developed during the response in order to restore the effectiveness of essential health services. In Guinea, USAID assisted in reinforcing IPC protocols for more than 2,800 healthcare workers at 90 facilities.<sup>94</sup> In Liberia, USAID provided IPC supplies to 57 USAID-supported facilities, developed standard operating procedures for storing IPC commodities in warehouses, and conducted supportive supervision at 31 health facilities whereby USAID health staff observed, reviewed, and mentored performance and procedures.<sup>95</sup> Meanwhile, CDC assisted Liberia's MOH in completing a national IPC training curriculum.<sup>96</sup> CDC also assisted Guinea and Sierra Leone with the development of national IPC policies and supported IPC quality improvement workshops in Sierra Leone.<sup>97</sup>

During the EVD outbreak, immunization rates declined as resources were shifted to EVD response efforts and people were fearful of contracting the disease at health facilities.<sup>98</sup> As EVD cases declined during the quarter, CDC increased its attention to vaccine preventable diseases,



USAID team visiting CMC Ratoma Hospital in Conakry, Guinea. (Photo by Mariama Keita, USAID, February 25, 2016)



Rapid renovations completed at CMC Flamboyant Hospital in Guinea by USAID partner Health Communication Capacity Collaborative Project. (Photo by Mariama Keita, USAID, March 1, 2016)

such as measles and polio.<sup>99</sup> CDC supported polio immunization campaigns in Guinea, Liberia, and Sierra Leone, and assisted with the response to polio cases in Guinea and measles cases in all three countries.<sup>100</sup> In Conakry, Guinea, USAID supported local partner Mutuel Financier pour les Femmes Africaines in reaching out to 418 women to promote immunization and participate in the polio campaign during the

reporting period.<sup>101</sup> USAID staff also responded to a measles outbreak in Nimba County, Liberia, by providing staff, transportation, and fuel to investigate the outbreak and immunize 1,008 children.<sup>102</sup> In Sierra Leone, USAID supported the training of more than 100 community health workers on community mobilization, and the distribution of health messages and maternal and child health information materials.<sup>103</sup>

During the quarter, CDC provided technical assistance to the MOHs of Guinea, Liberia, and Sierra Leone to develop strategic plans, such as the National Laboratory Strategic Plan and strategic plans for the roll out of rapid diagnostic tests for EVD and other diseases.<sup>104</sup> CDC also reported assisting with the implementation of IPC focal points within the MOH and at large healthcare facilities to accelerate skills and knowledge.<sup>105</sup> Meanwhile, USAID provided technical assistance to the Directorate of Drugs and Medical Stores within Sierra Leone's MOH to draft terms of reference for directorate functions, staffing, and operations.<sup>106</sup>

In Guinea, USAID and implementing partner, the Johns Hopkins University-led Health Communication Capacity Collaborative Project, finished the rehabilitation of the Flamboyant Health Hospital in Conakry.<sup>107</sup> Over 150 community members, along with participants from USAID and the MOH, cleaned the health facility, built walls, and undertook simple upgrades to make the health center more appealing and sanitary, and renew community trust in and ownership of the health center.<sup>108</sup> By the end of the reporting period, USAID was in the process of finishing the rehabilitation of another health facility in Ratoma.<sup>109</sup>



## EBOLA SURVIVORS

EVD survivors have reported health problems such as joint pain, headaches, visual problems, extreme fatigue, and mental health challenges.<sup>110</sup> According to WHO, there are an estimated 17,000 EVD survivors in West Africa who may require routine healthcare services, such as antenatal care and vaccinations, as well as specialized medical support.<sup>111</sup>

To help understand the long-term consequences of the disease, characterize associated health problems, determine whether “survivors develop immunity that will protect them from future Ebola infection, and assess whether [survivors] can transmit [Ebola] infection to close contacts and sexual partners,” CDC, NIH, and the Government of Liberia collaborated to launch the PREVAIL III study in June 2015.<sup>112</sup> As of March 18, 2016, more than 2,515 individuals had been enrolled in the study.<sup>113</sup> In February 2016, preliminary findings released by NIAID revealed eye, musculoskeletal, and neurological problems among EVD survivors and noted that the virus could still be intermittently detected in individuals even after they have tested negative.<sup>114</sup> The preliminary findings also reported on the risk of sexual transmission of the virus as viral material could persist in semen up to 18 months after disease onset.<sup>115</sup>

In Liberia and Sierra Leone, CDC continued to provide technical assistance to semen testing programs.<sup>116</sup> WHO reported that as of March 30, 2016, more than 350 male survivors had utilized semen screening and counseling services in Liberia while over 2,600 survivors accessed general health assessment and eye exam services in Sierra Leone.<sup>117</sup>

## GOVERNANCE AND ECONOMIC CRISIS MITIGATION

As Guinea, Liberia, and Sierra Leone recover from the EVD outbreak, the International Monetary Fund (IMF) projected economic growth in all three countries for 2016. The IMF projects 4 percent economic growth in Guinea, 3.9 percent in Liberia, and 4.3 percent in Sierra Leone.<sup>118</sup> Notwithstanding these positive indicators, the countries faced continuing economic challenges. USAID reported that Guinea’s economy continued facing austerity in government spending, a decline in Central Bank reserves, and anemic commodity prices.<sup>119</sup> USAID reported that in Sierra Leone, the mining sector and privately owned companies returned and restarted operations, but poverty, high unemployment, and a projected inflation rate of approximately 8.5 percent for 2016 continued to pose challenges for the country.<sup>120</sup>

During the reporting period, USAID reported one new award for economic crisis mitigation. On February 1, 2016, the USAID mission in Liberia awarded a contract to United Infrastructure Projects to reconstruct a damaged water plant in Voinjama City.<sup>121</sup> USAID obligated \$9.2 million for the Vionjama project.<sup>122</sup>

## INNOVATION AND COMMUNICATION TECHNOLOGY

During the quarter, the USAID-supported MEASURE Evaluation project continued providing technical assistance to the MOHs of Guinea, Liberia, and Sierra Leone to develop national health information systems (HIS) strategies and governance systems, including establishment of the Health, Monitoring, Evaluation, and Research technical working group in Liberia, a national governance structure for decision-making and monitoring of HIS.<sup>123</sup> USAID reported that MEASURE Evaluation completed onsite technical assistance in Liberia and that Liberia's MOH completed a national HIS strategy.<sup>124</sup> By the end of the reporting period, MEASURE Evaluation was still providing technical assistance to Sierra Leone to support the development of a national HIS strategy and governance, while the deployment of a new HIS was proceeding in Guinea.<sup>125</sup> According to USAID, Guinea was the last among the three most affected EVD countries to transition from paper-based health information reporting system.<sup>126</sup> USAID reported that the new HIS being deployed in Guinea is the same system being used by 14 other countries in the region to support disease surveillance, data collection, and analysis of routine health information.<sup>127</sup>

According to USAID, there were challenges in sustaining capacity development and relationship management within Sierra Leone's MOH due to staff turnover and retention issues that inhibited information sharing and knowledge transfer.<sup>128</sup> To mitigate these challenges, USAID's



USAID partner Health Communication Capacity Collaborative Project conducting community-level health education using traditional storytellers in Conakry, Guinea. (Photo by Issiaga Daffe, Johns Hopkins University Center for Communication Programs, February 2016)

embedded technical advisors reportedly relied on their relationships within Sierra Leone's MOH to overcome delays and USAID was working with partners to train multiple employees on the same systems.<sup>129</sup>

USAID also provided assistance to 14 innovations under the Fighting Ebola Grand Challenge.<sup>130</sup> In March 2016, USAID arranged for six innovators to meet with Médecins Sans Frontières and WHO representatives to demonstrate how their innovations fit with IPC and

treatment protocols in ETUs and to gain critical feedback on their products.<sup>131</sup> Meanwhile, CommCare, a platform developed by Dimagi for contact tracing, expanded in all three countries and according to USAID, was used by approximately 1,360 healthcare workers to trace and register approximately 20,000 contacts by the end of the quarter.<sup>132</sup> USAID reported that the CommCare platform also includes templates for decommissioning ETUs, Ebola education and training, IPC, stigma reduction, and supply chain.<sup>133</sup> Meanwhile, mHero, a mobile platform developed by IntraHealth for two-way short message service communication between health managers and healthcare workers, reached 5,500 Liberian health workers during the quarter, according to USAID.<sup>134</sup> USAID reported that Liberia's MOH had used mHero in over 22 EVD and health-related communication campaigns by the end of the reporting period.<sup>135</sup>

## U.S. Government Efforts to Strengthen Global Health Security

In February 2016, the U.S. Government along with the European Commission and seven other countries attended the Sixteenth Ministerial Meeting of the Global Health Security Initiative in Washington, D.C.<sup>136</sup> At the meeting, the participants affirmed their commitment to WHO reforms and implementation of the International Health Regulations (IHR), committed to working with the international community in responding to the Zika virus outbreak, and collaborated on sharing information and national approaches to preparedness and response for emerging global health threats.<sup>137</sup>

The U.S. Ebola response and preparedness strategy includes efforts to strengthen global health security infrastructure in West Africa and other regions to prevent avoidable outbreaks of diseases like EVD, and to enable countries to detect threats and respond rapidly and effectively to future disease outbreaks.<sup>145</sup> For example, during the quarter, USAID's Ebola preparedness

### ZIKA VIRUS

On February 1, 2016, the WHO Director-General declared the Zika virus a "public health emergency of international concern."<sup>138</sup> Since 2015, WHO reported that 42 countries had experienced their first Zika virus outbreak.<sup>139</sup> The Zika virus, according to CDC, is transmitted to people primarily by infected mosquitoes but can also be transmitted person-to-person from pregnant women to their fetuses and through sexual contact.<sup>140</sup>

On February 22, 2016, the White House submitted to Congress a request for approximately \$1.9 billion in emergency funding to respond and prepare for the Zika virus domestically and internationally.<sup>141</sup> The President also requested Congress to provide flexibility to spend Ebola contingency funds to support Zika activities.<sup>142</sup> During the reporting period, HHS agencies and USAID reported that no Ebola-related funding were supporting Zika activities.<sup>143</sup> Shortly after the end of the quarter, on April 6, 2016, the White House announced that \$510 million in existing Ebola funds were to be redirected to Zika activities, in accordance with section 7058(c) of the Consolidated and Further Continuing Appropriations Act, 2015.<sup>144</sup>

activities in Africa included supporting IPC training for 339 healthcare staff in Benin and 113 healthcare staff in Senegal; assisting Cote d'Ivoire with monitoring and evaluation support to improve data quality and through partner Johns Hopkins University's Health Communication Capacity Collaborative project, developing an EVD communication guide; and assisting Guinea Bissau and Mali in improving their epidemiological surveillance.<sup>146</sup> Additionally, USAID supported activities to engage communities and raise public awareness about EVD through EVD prevention messages on radio programs in Benin and Burkina Faso, and interactive street theater in Ghana.<sup>147</sup>

EVD preparedness activities complement the Global Health Security Agenda (GHSA) as steps to strengthen EVD preparedness and response also reinforce global health security against other health threats. The U.S. Government supports the GHSA, a partnership launched by the U.S. Government and 28 other countries, WHO, the UN Food and Agriculture Organization, and the World Organization for Animal Health in February 2014 "to advance a world safe and secure from infectious disease threats."<sup>148</sup> GHSA focuses on strengthening countries' capacity to prevent, detect, and respond to infectious disease threats.<sup>149</sup> The U.S. Government has committed to assisting 30 countries achieve GHSA objectives.<sup>150</sup>

## **INTERNATIONAL HEALTH REGULATIONS AND GLOBAL HEALTH SECURITY AGENDA**

The International Health Regulations (IHR) provide a framework for strengthening global health security. Designed to enable countries to work with one another to deal with public health risks, a revised IHR was approved by the World Health Assembly in 2005 and came into effect in June 2007.<sup>151</sup> Under IHR, member states are required to report to WHO any health-related events that may pose a risk to the international community, respond to related WHO information requests, and improve and bring their public health surveillance and response systems in line with IHR standards and criteria.<sup>152</sup> Member states are also responsible for achieving certain core IHR public health capacities.<sup>153</sup>

The Global Health Security Agenda (GHSA) focuses on strengthening countries' capacity to prevent, detect, and respond to infectious disease threats.<sup>154</sup> Eleven focus areas for action were identified to help drive progress toward GHSA objectives.<sup>155</sup> To help prevent avoidable epidemics, GHSA targets activities to address antimicrobial resistance, zoonotic disease, biosafety and security, and immunization.<sup>156</sup> To aid in the early detection of threats, GHSA efforts focus on building national laboratory systems, real-time surveillance capacity, global health security reporting, and developing the needed health security workforce.<sup>157</sup> To support rapid and effective response, GHSA targets the establishment and networking of emergency operations centers, building capacity for rapid multi-sectoral response, and creating frameworks for leveraging partners' medical personnel and countermeasures when needed.<sup>158</sup>

The GHSA Steering Group—comprised of 10 countries, including the United States—tracks the progress, identifies challenges, and oversees implementation of GHSA objectives.<sup>159</sup> The U.S. Government is co-leading GHSA efforts to build national laboratory systems, and is a major contributor in addressing antimicrobial resistance and zoonotic diseases, and promoting biosafety and biosecurity, real-time surveillance, and workforce development.<sup>160</sup> CDC and USAID also reported progress in implementing GHSA activities during the quarter. Five-year country-specific roadmaps and 1-year work plans on building capabilities to prevent, detect, and respond to emerging pandemic threats were completed for 15 out of the 17 initial GHSA focus countries, including Liberia, in the last quarter.<sup>161</sup> During this reporting period, interagency teams visited Guinea and Sierra Leone, and submitted roadmaps and work plans for the countries to the National Security Council (NSC) for approval.<sup>162</sup> The NSC is coordinating GHSA efforts among U.S. Government agencies.<sup>163</sup>

USAID reported that the GHSA work plan for Sierra Leone, which focused on strengthening human resource capacity, enhancing communication across ministries and the executive branch, and ensuring sustainability, was approved by the NSC in March 2016.<sup>164</sup> According to USAID, the work plan aligned with the priority action packages of the Government of Sierra Leone.<sup>165</sup> USAID reported that the GHSA work plan for Guinea - which was under review by the NSC at the end of this reporting period - aligned with the three priorities in its National Recovery Plan: 1) maintain zero Ebola cases; 2) strengthen the health systems; and 3) promote maternal and child health.<sup>166</sup> In addition, during the reporting period, U.S. Government interagency teams started visiting the other 13 focus countries announced in November 2015 to coordinate GHSA efforts and assist host governments in the development of the 5-year country-specific roadmaps and 1-year work plans.<sup>167</sup>

CDC's GHSA activities focused on strengthening public health infrastructure in order for countries to rapidly detect, prevent, and respond to infectious disease threats.<sup>168</sup> For example in Liberia, CDC reported that the second cohort of 20 surveillance officers graduated from CDC's Field Epidemiology



*ETU worker in Bong county, Liberia cleaning an ambulance. (Photo by USAID OIG Regional Inspector General/ Dakar, October 1, 2015)*



project received permits from the MOH to implement activities to detect the animal host species for EVD, and a workshop for project field teams and Ministry of Agriculture personnel on safe wild animal capture and sample collection.<sup>176</sup>

CDC and USAID also supported activities that enable countries to respond rapidly and effectively to infectious disease threats. USAID's Preparedness and Response project under the EPT 2 program and CDC supported a workshop in Cameroon that brought together multiple government ministries covering public health, the animal industry, and the environment to identify priority zoonotic diseases and establish cross-sector partnerships for research, surveillance, prevention, and preparedness activities.<sup>177</sup> A similar multi-sectoral GSHA workshop, facilitated by USAID's Preparedness and Response project, was held in Senegal to identify priority coordination and collaboration activities to address emerging infectious threats to public health.<sup>178</sup> In Cote d'Ivoire, USAID's Preparedness and Response project partners participated in simulation exercises by the national government and WHO to evaluate the country's capacity to manage an EVD outbreak.<sup>179</sup>

In Uganda, USAID's PREDICT project supported the national government in finalizing guidelines and standard operating procedures for responding to Ebola and Marburg outbreaks.<sup>180</sup> While another project under USAID's EPT 2 program, the One Health Workforce project, supported the 2nd International One Health Conference that was held in the country during the quarter whereby more than 300 attendees throughout East Africa received instructions on technical, scientific, and policy advances in infectious disease control.<sup>181</sup>

CDC reported successes resulting from GHSA activities during the quarter. For example in Cameroon, the newly developed emergency operations center shortened the country's response time to a health emergency from 8 weeks to 1 week.<sup>182</sup> In Mali, CDC-trained personnel worked with the MOH to launch an emergency polio vaccination campaign in the capital and surrounding areas which stopped a potential polio outbreak after a child was identified with the disease.<sup>183</sup>

Lastly during the reporting period, CDC, USAID, WHO and other partners supported the development of the Alliance for Country Assessments for Global Health Security and IHR and the use of the Joint External Evaluation (JEE) process.<sup>184</sup> The JEE process evaluates country capacity in 19 technical areas associated with GHSA action packages and the IHR.<sup>185</sup> In February 2016, USAID and its GHSA program partners participated in the JEE process in Ethiopia and Tanzania.<sup>186</sup> According to CDC, the United States will undertake the JEE process in May 2016 and HHS has been working on the self-assessment.<sup>187</sup>

## Oversight Activities

Although requirements for oversight coordination and reporting under Section 8L of the Inspector General Act of 1978, as amended, concluded at the end of FY2015, the OIGs for DoD, DOS, HHS and USAID plan to continue to work together, along with DHS OIG and the Government Accountability Office (GAO), to provide coordinated oversight of international Ebola response and preparedness efforts. HHS OIG and USAID OIG also plan to continue to provide quarterly reporting on the progress of Ebola response, preparedness, and recovery efforts, focusing to a greater extent on oversight activities.

### U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT OIG

USAID OIG released the following EVD-related audit during the reporting period:

- **Audit of Selected Activities from USAID/Food for Peace's Response to the Ebola Crisis in West Africa. (Report No. [7-962-16-003-P](#), March 16, 2016).**

The Ebola epidemic in West Africa in 2014 had profound impacts on trade and agriculture, leading to an increase in food prices and a decrease of food availability. To address these issues, USAID's Office of Food for Peace (FFP) funded several emergency food security programs in the most affected countries. The first four nongovernmental organizations to receive FFP funding were Catholic Relief Services, Mercy Corps, Project Concern International, and Save the Children. The primary activities of these programs were cash transfers to buy food and food vouchers that could be redeemed for food at local markets. As of June 30, 2015, FFP had obligated \$22.7 million and disbursed \$2.4 million through these implementing partners.

OIG found that the Food for Peace programs had started to help vulnerable people meet their food needs and recover from the Ebola crisis. For example, OIG observed that a beneficiary of Mercy Corps cash transfer program intended to use her disbursement to improve her rice-selling business, which suffered during the crisis, and a Catholic Relief Services beneficiary used her vouchers to exchange for food at the market.

However, because the programs began late, they were not on track to address food insecurity resulting from Ebola. Emergency programs were on average 3 months late and many had missed their targets. The delays were due to problems with the award approval process, staff recruitment, and local partner coordination. The delayed start had several negative effects, and much of the time implementing partners intended to spend providing food assistance was lost.

OIG also identified several other issues. For instance, one implementing partner's beneficiary selection process was not adequately documented and did not show the criteria each beneficiary met to be selected for the program. The lack of documentation increases



the risk of nepotism as well as the risk that fewer of the most vulnerable beneficiaries would be included in the program. In addition, the same implementing partner did not allocate expenses correctly and allowed budget overruns. Lastly, another implementing partner did not set a realistic budget for bank services, increasing the risk that the budget would not accurately reflect the program needs.

USAID made management decisions and took final action on all nine of USAID OIG's recommendations. However, OIG disagreed with three management decisions involving procedures for identifying and selecting beneficiaries and requirements for conducting a financial review of an implementer's activities.

USAID OIG had four additional audits underway that relate to USAID's Ebola response and recovery efforts. This work is being conducted by OIG's regional Inspector General office in Dakar, Senegal, and by the Performance Audits Division based in Washington, D.C.

- **Audit of USAID's Awards for the Ebola Response.** This audit will provide an overview of how USAID selected awards in response to a rapidly moving crisis. The audit will determine whether the acquisition and assistance instruments USAID chose were suitable for the Ebola response, and whether USAID made and modified the awards appropriately for implementing USAID's Ebola response strategy.
- **Audit of USAID/OFDA Funded Management and Utilization of Ebola Treatment Units and Commodity Care Centers in Liberia and Sierra Leone.** This audit will determine whether USAID/OFDA was effectively managing and utilizing Ebola treatment units and community care centers to support host country government needs. One of the primary causes for EVD infection in Liberia, Sierra Leone, and Guinea was the poor, or lack of adequate, healthcare systems. Most of the areas affected by the disease did not have health facilities to treat patients. In addition, existing hospitals did not have enough beds or medical supplies. Part of the funding from the U.S. Government assisted Liberia with the construction and provisioning of temporary structures to treat Ebola.
- **Audit of USAID/OFDA's Provision of Medical Commodities in Response to the Ebola Outbreak.** USAID OIG is conducting this audit to determine how USAID/OFDA assessed medical commodity needs to respond to the Ebola outbreak and if it obtained the goods needed for the response.
- **Audit of Selected USAID/OFDA-Funded Training of Healthcare Workers in Ebola Affected Countries.** This audit will determine whether USAID/OFDA is achieving its goal to train and prepare healthcare workers to prevent the spread of Ebola through proper healthcare practices. The audit covers six implementers who provided training in FY 2015 on infection prevention and control practices to government officials and healthcare workers. Since the audit covers six implementers working in Liberia, Sierra Leone, and Guinea, the audit team is conducting the fieldwork in phases. Phase I was completed in the first quarter of FY 2016 and Phase II will take place in the second quarter of FY 2016.



*Entrance to Ebola treatment unit in Port Loko district, Sierra Leone. (Photo by USAID OIG Regional Inspector General/ Dakar, October 14, 2015)*

In addition, USAID OIG issued two EVD response-related audits prior to this reporting period. In late 2014, USAID OIG issued an audit on the USAID mission in Guinea's systems for ensuring appropriate oversight of 48 programs valued at about \$135 million (Report No. [7-675-15-003-P](#), November 6, 2014). USAID OIG determined that USAID/ Guinea had not managed the process for auditing its programs effectively and found that the mission did not verify whether some audits were performed and submitted on time, did not maintain a complete audit plan, and did not close out expired awards on time. USAID OIG made four recommendations to improve the management of USAID/Guinea's systems for ensuring appropriate oversight of funded programs and USAID has taken final action on each of them.

In the previous quarter, USAID OIG issued an audit of Selected Ebola-Response Activities Managed by USAID/OFDA in Liberia (Report No. [7-669-16-002-P](#), December 4, 2015). USAID OIG found that social mobilization and case management activities were contributing to the success of Liberia's overall Ebola response because efforts were of sufficient scale and outreach workers had established relationships with leaders in the affected communities. However, auditors also noted that the implementer's performance measures were limited and sometimes the information derived from these measures was inaccurate; and the implementer's

controls over \$1.5 million in salary payments made in cash were questionable. Additionally, OIG auditors noted that OFDA did not always document program monitoring or verify reported results, nor did it start to develop transition plans for key assets, such as vehicles valued at \$6 million. Moreover, OFDA had not formalized a handover plan for a key burial site. USAID OIG made seven recommendations and acknowledged management decisions on all recommendations and final action on one recommendation. USAID OIG disagreed with management decisions on two recommendations.

Given USAID's changing priorities, USAID OIG is revising its planned FY 2016 performance audit work for the Ebola response. For its financial audit work, however, USAID OIG intends to add discrete steps to its future Government Management Reform Act work to test financial data from a sample of Ebola response, recovery, and preparedness awards. The results of this work will be reported in a separate product with a specific focus on the testing of awards related to Ebola response, recovery, and preparedness efforts.

USAID OIG's External Financial Audit Division (EFA) will also coordinate and oversee Agency Contacted Audits, performed by independent accountants, to test financial activities of selected Ebola awards. The objective of these audits will be to determine the allowability, allocability, and reasonableness of costs incurred, by conducting Cost Incurred Audits of the USAID resources managed by USAID's implementing partners. EFA will select the awards and implementers for the incurred cost audits using a risk-based approach. The independent auditors shall perform the audits in accordance with Statements of Work developed by EFA and U.S. Government Auditing Standards. The ensuing audit reports will be reviewed for acceptance by the EFA and reported as separate products to fulfill USAID/OIG's oversight mandate over the use of, and accountability for, USAID's funds awarded for Ebola response and preparedness.

## DEPARTMENT OF HEALTH AND HUMAN SERVICES OIG

HHS OIG has an ongoing Office of Evaluations and Inspections review related to EVD. Its Office of Audit Services is planning audits of international activities and will also conduct financial verification related to the agency's EVD expenditures. As of March 31, 2016, HHS OIG had one review underway.

- **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 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; and to determine the current status of and barriers to hospital preparedness at a nationally projectable sample of hospitals. The evaluation plan for this review is currently under development and the status of the evaluation is ongoing.

In addition, HHS OIG has plans to start two audits related to the Ebola response and preparedness efforts in 2016.

- **Review of the Centers for Disease Control and Prevention’s Ebola-Related Awards.** The Consolidated and Further Continuing Appropriations Act, 2015 (P.L. 113-235) 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, with \$603 million for international Ebola response and preparedness activities in the current three epidemic and high priority countries, including neighboring countries. The objective of this audit will be to determine whether CDC awarded Ebola related funds in FY 2015 in compliance with federal and departmental regulations.
- **Review of Ebola Coordination of Roles and Responsibilities and Operational Effectiveness.** After the first cases of Ebola were reported in West Africa in March 2014, the United States mounted a Government response to contain and eliminate the epidemic at its source. HHS launched an effort that encompassed the Centers for Disease Control and Prevention, Office of the Assistant Secretary for Preparedness and Response, National Institutes of Health, Food and Drug Administration, and the U.S. Public Health Service Commissioned Corps. HHS OIG will focus this review on the preparation and coordination of its Ebola response activities within each of its divisions. In addition, HHS OIG will review how HHS’s Ebola response efforts interfaced within the U.S. government’s strategic Ebola response effort. The objectives of this audit are to determine how HHS planned and coordinated inter- and intra-agency response efforts to the Ebola crisis.<sup>188</sup>

## DEPARTMENT OF STATE OIG

DOS OIG had one ongoing audit of Ebola-related activities at the end of the reporting period.

- **Audit of Aeromedical Biological Containment Evacuation Contracts Within the Office of Medical Services.** This audit will determine whether the Bureau of Administration, Office of Logistics Management, Office of Acquisitions Management, and the Office of Medical Services properly administered and provided oversight of aeromedical biological containment evacuation contracts in accordance with acquisition regulations, and whether the Office of Medical Services received reimbursement for non-Department of State medical evacuations as required.

## DEPARTMENT OF HOMELAND SECURITY OIG

DHS OIG released an EVD-related audit during the reporting period.

- **Audit of DHS Ebola Response. (Report No. [OIG-16-18](#), January 6, 2016).** DHS OIG conducted this audit on DHS' response to the Ebola outbreak to determine whether DHS effectively implemented DHS' screening measures. Overall, DHS did not ensure sufficient coordination, adequate training, and consistent screening during its Ebola response. As a result, some passengers with a risk of EVD may have entered the United States without adequate screening and the DHS workforce performing the response was not always appropriately protected. DHS OIG made ten recommendations to strengthen program management, performance, and oversight. The Department concurred with all ten recommendations and has initiated corrective actions that should improve the effectiveness of the Department's response to Ebola when implemented.

DHS OIG had one ongoing audit at the end of the reporting period.

- **Audit of DHS Pandemic Planning and Response.** This audit is to determine if DHS has implemented adequate preparedness plans to continue mission-essential functions during a pandemic.<sup>189</sup>

## GOVERNMENT ACCOUNTABILITY OFFICE

GAO oversight activities are currently being conducted under section 9005 of the Consolidated and Further Continuing Appropriations Act, 2015 (P.L. 113-235, December 16, 2014), which provides for GAO oversight of funds appropriated to USAID and DOS for Ebola response and preparedness. During the reporting period, GAO had one related engagement under way.

- **Review of Ebola Response and Preparedness.** The review will address DOS and USAID activities to prevent, prepare for, and respond to the 2014 EVD outbreak in West Africa. In particular, GAO plans to examine: the measures DOS and USAID took to be prepared to respond to an Ebola outbreak prior to the 2014 outbreak in West Africa; the actions DOS and USAID have taken and funding used to respond to the outbreak; and key lessons learned from the response effort.<sup>190</sup>

## INVESTIGATIONS

In addition to audits, evaluations, and reviews of U.S. Government activities associated with Ebola preparedness and response, the oversight community conducts investigations into corresponding allegations. One related USAID OIG investigation remained ongoing at the end of the quarter. Another EVD-response related investigation was closed. USAID OIG has conducted 25 fraud awareness briefings to more than 500 attendees since the beginning of the response to the Ebola outbreak.

## RELATED OIG PRODUCTS

USAID OIG. *Audit of Selected Ebola-Response Activities Managed by USAID's Office of U.S. Foreign Disaster Assistance in Liberia.* Report No. [7-669-16-002-P](#). December 4, 2015.

DoD OIG. *Army Needs to Improve Contract Oversight for the Logistics Civil Augmentation Program's Task Orders.* Report No. [DODIG-2016-004](#). October 28, 2015.

DoD OIG. *Evaluation of DoD Force Health Protection Measures During Operation United Assistance.* Report No. [D2015-D00SPO-0080.000](#). September 30, 2015.

DoD OIG. *U.S. Army Contracting Command—Rock Island Needs to Improve Contracting Officer's Representative Training and Appointment for Contingency Contracts.* Report No. [DODIG-2015-147](#). July 10, 2015.

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

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

## Appendix A: Selected Ebola Diagnostic Tools and Medical Countermeasures Supported by U.S. Government Agencies

Product	U.S. Agencies	Status
<b>Diagnostic Tools</b>		
CDC Ebola Virus NP Real-time RT-PCR Assay By CDC	CDC	Authorized for use in the United States by FDA under Emergency Use Authorization.
CDC Ebola Virus VP40 Real-time RT-PCR Assay By CDC	CDC	Authorized for use in the United States by FDA under Emergency Use Authorization.
EZ1 Real-time RT-PCR Assay By DoD	DoD	Authorized for use in the United States by FDA under Emergency Use Authorization.
Next Generation Diagnostics System Increment 1 Film Array BioThreat-Ebola (BT-E) Assay By BioFire Defense	DoD Chemical and Biological Defense Program, NIH/NIAID	Authorized for use in the United States by FDA under Emergency Use Authorization.
OraQuick® By OraSure Technologies	ASPR/BARDA, CDC	Authorized for use in the United States by FDA under Emergency Use Authorization. Pilot projects in Guinea, Liberia, and Sierra Leone.
ReEBOV™ Antigen Rapid Test By Corgenix	NIH/NIAID	Authorized for use in the United States by FDA under Emergency Use Authorization.
Xpert Ebola Assay By Cepheid	NIH/NIAID	Authorized for use in the United States by FDA under Emergency Use Authorization.
<b>Vaccines</b>		
cAd3-ZEBOV By GlaxoSmithKline and NIAID	ASPR/BARDA, NIH/NIAID	Results from the PREVAIL I, Phase II study were reported in February 2016 while immunogenicity results were being evaluated. According to NIAID, results from the study indicated that the cAd3-ZEBOV vaccine appeared to be safe and was well tolerated.*
rVSV-ZEBOV By NewLink Genetics and Merck Vaccines USA	ASPR/BARDA, CDC, DoD Joint Science and Technology Office (JSTO), NIH/NIAID	Results from the PREVAIL I, Phase II study were reported in February 2016 while immunogenicity results and data from the STRIVE study were being evaluated. According to NIAID, results from the study indicated that the rVSV-ZEBOV vaccine appeared to be safe and was well tolerated. The STRIVE study completed vaccination of more than 8,000 healthcare and frontline workers in Sierra Leone and is continuing follow-up activities, including an immunogenicity sub-study, for 6 months after vaccination. Phase III consistency trial funded by ASPR was underway.**

\* Phase II clinical trials test the drug or treatment for effectiveness and safety in a larger group of people.

\*\* Phase III clinical trials test the drug or treatment for effectiveness, side effects, comparison to commonly used treatments, and safety in a large group of people.

Ad26.Filo prime and MVA-BN Filo boost By Johnson & Johnson and Bavarian Nordic	NIH/NIAID	Phase I clinical trial anticipated to begin in 2016.***
Ad26.ZEBOV prime and MVA- BN Filo boost By Johnson & Johnson and Bavarian Nordic	ASPR/BARDA, NIH/ NIAID	Phase I trial underway in the United States. Exploring expanded PREVAIL I Phase II safety and immunogenicity study in comparison to rVSV-ZEBOV in 2016.
HPIV3/EboGP By NIAID	NIH/NIAID	Phase I clinical trial was underway.
Rabies-EBOV By NIAID and Thomas Jefferson University	NIH/NIAID	Phase I clinical trial was anticipated to begin in 2016.
rVSVN4CT1 EBOV By Profectus	ASPR/BARDA, NIH/NIAID	Phase I clinical trial to evaluate safety and immune response of monovalent (Zaire Ebola) vaccine started in January 2016. According to ASPR, DoD continued supporting the development of the trivalent (Marburg, Sudan Ebola, and Zaire Ebola) vaccine candidate.

### Therapeutic Treatments

ZMapp By Mapp Biopharmaceuticals	ASPR/BARDA, DoD JSTO, NIH/NIAID	Enrollment in the PREVAIL II trial to compare optimized standard of care against optimized standard of care plus ZMapp was halted in February 2016 due to a lack of EVD cases. Preliminary PREVAIL II results were shared publicly by NIAID in February 2016. According to NIAID, results suggest potential benefit but due to low enrollment, statistical significance was could not be achieved.
BCX-4430 By Biocryst	ASPR/BARDA, NIH/NIAID	Phase I trial using intramuscular delivery was fully enrolled. Phase I trial using intravenous delivery anticipated to begin in 2016.
REGN3479-70-71 By Regeneron	ASPR/BARDA	ASPR reported supporting the non-clinical evaluation of a cocktail of three monoclonal antibodies against EVD. Phase I study was anticipated to begin in May 2016.

Sources: DoD and HHS

\*\*\* Phase I clinical trials are the first tests of a new drug or treatment in a small group of people. The tests evaluate the safety of the drug or treatment, determine a safe dosage range, and identify side effects.



## Appendix B: USAID Ebola-related Programs by Pillar and Geographical Focus as of March 31, 2016 (Unaudited)

The table contains Ebola response and preparedness program information provided by USAID. In addition to information regarding the strategic and geographic focus of program activities, it includes information on the USAID unit associated with the program, available program description information, and data on amounts that USAID has committed and obligated to particular programs and activities. USAID-funded programs that concluded before March 31, 2016, are not included, nor are programs for which complete award and period of performance information were unavailable. These activities are not included in the table as a result.

USAID Bureau/Office	Program Description	Implementing Partner	Committed (\$)	Obligated (\$)	Period of Performance	
					Start Date	End Date
<b>Control the Outbreak</b>						
<b>Regional</b>						
Office of U.S. Foreign Disaster Assistance	Support the Global Information Management Officer Rapid Deployment Program	IMMAP	385,990	385,990	10/1/2014	9/30/2016
Office of U.S. Foreign Disaster Assistance	Fund third-party study of the international Ebola outbreak and response	Overseas Development Institute	30,011	30,011	6/28/2013	6/28/2016
Office of U.S. Foreign Disaster Assistance	Support for research study on disinfection to prevent Ebola transmission	Tufts University	558,504	558,504	6/1/2015	11/30/2016
Office of U.S. Foreign Disaster Assistance	Strengthening evidence and practice on mental health and psychosocial support	UN Children's Fund (UNICEF)	500,000	500,000	8/14/2015	7/31/2016
Office of U.S. Foreign Disaster Assistance	Provide coordination support to the Ebola response	UN Office for the Coordination of Humanitarian Affairs	4,042,536	4,042,536	1/1/2015	3/31/2016
Office of U.S. Foreign Disaster Assistance	Support for the coordination of agencies involved in the response at international, national, local government and community levels	World Health Organization	477,712	477,712	1/1/2015	3/31/2016

Guinea						
Office of U.S. Foreign Disaster Assistance	Support for contact tracing efforts and follow up with Ebola survivors	Accion Contra el Hambre	1,681,043	1,681,043	8/1/2015	4/30/2016
Office of U.S. Foreign Disaster Assistance	Support sanitation and hygiene activities, including the provision of 900,000 soap bars to 50,000 households that received hand-washing devices, social mobilization and building community awareness to improve hygiene practices, contact tracing, and surveillance activities	Center for International Studies and Cooperation	1,404,928	1,404,928	7/30/2015	4/29/2016
Office of U.S. Foreign Disaster Assistance	Support training of health facility staff in IPC and triage protocols along with provision of basic materials to improve hygiene and adherence to IPC practice	Catholic Relief Services	1,846,005	1,846,005	7/23/2015	4/30/2016
Office of U.S. Foreign Disaster Assistance	Support community response planning for future EVD outbreaks in lower Guinea through risk management and WASH activities	Danish Refugee Council	750,000	750,000	8/15/2015	3/31/2016
Office of U.S. Foreign Disaster Assistance	Equip and staff Ebola transit center in Forecariah, Guinea	French Red Cross	4,505,445	4,505,445	12/1/2014	4/15/2016
Office of U.S. Foreign Disaster Assistance	Support outreach activities and maintain Forecariah ETU and transit center	French Red Cross	680,000	680,000	12/1/2014	4/15/2016
Office of U.S. Foreign Disaster Assistance	Provide support for safe burials, social mobilization, and training of Ebola response workers	International Federation of Red Cross and Red Crescent Societies	3,000,000	3,000,000	9/26/2014	3/31/2016

Office of U.S. Foreign Disaster Assistance	Deploy and support 100 volunteers for safe burials, manage waste at isolation centres, procure and pre-position PPE kits, train volunteers on the use of PPEs, train 60 supervisors and 1,250 volunteers on EVD signs and symptoms, prevention measures and referral mechanisms	International Federation of Red Cross and Red Crescent Societies	1,000,000	1,000,000	9/26/2014	3/31/2016
Office of U.S. Foreign Disaster Assistance	Establish regional Ebola coordination hub in Conakry and support for Ebola coordinator	International Federation of Red Cross and Red Crescent Societies	1,000,000	1,000,000	9/26/2014	3/31/2016
Office of U.S. Foreign Disaster Assistance	Provide support for safe burials, social mobilization, and training of Ebola response workers	International Federation of Red Cross and Red Crescent Societies	999,552	999,552	9/26/2014	3/31/2016
Office of U.S. Foreign Disaster Assistance	Support screening and referral units at 10 hospitals, including supplies and IPC training for all hospital staff, and psychosocial support for EVD-affected communities	International Medical Corps	14,854,760	14,854,760	2/1/2015	4/30/2016
Office of U.S. Foreign Disaster Assistance	Support production of daily radio show in five languages and expand geographical reach to additional audiences in border areas with Ebola-related messages	Internews	1,200,000	1,200,000	10/17/2014	5/31/2016
Office of U.S. Foreign Disaster Assistance	Provide training for radio journalists and local media on how to report on the humanitarian response to the Ebola outbreak	Internews	799,846	799,846	10/17/2014	5/31/2016
Office of U.S. Foreign Disaster Assistance	Construct and support 18 provincial emergency operations centers to strengthen command and control of the Ebola response	International Organization for Migration	3,492,220	3,492,220	12/19/2014	6/30/2016
Office of U.S. Foreign Disaster Assistance	Rehabilitate and equip provincial emergency operations centers in Guinea	International Organization for Migration	2,000,000	2,000,000	12/19/2014	6/30/2016

Office of U.S. Foreign Disaster Assistance	Support reconstruction and provide logistics expertise to retrofit up to three additional provincial emergency operations centers	International Organization for Migration	300,000	300,000	12/19/2014	6/30/2016
Office of U.S. Foreign Disaster Assistance	Manage disease surveillance activities along the Guinean borders with Liberia and Sierra Leone, including alert, case management and referral mechanisms	International Organization for Migration	5,475,000	5,475,000	5/22/2015	8/31/2016
Office of U.S. Foreign Disaster Assistance	Provide IPC training for health workers, distribute IPC kits at health facilities, and at community level, provide hygiene promotion knowledge and case detection skills	Premiere Urgence	1,295,000	1,295,000	9/1/2015	6/30/2016
Office of U.S. Foreign Disaster Assistance	Collaborate with the Ministry of Health to identify IPC gaps in targeted hospitals and health centers, and develop capacity building plan to ensure comprehensive IPC	Women and Health Alliance International	712,046	712,046	8/17/2015	3/31/2016
Office of U.S. Foreign Disaster Assistance	Provide logistics and supply chain capabilities to UN Mission for Ebola Emergency Response, and provide of humanitarian air services and strategic airlift via UN Humanitarian Air Service	World Food Program	6,000,000	6,000,000	11/12/2014	12/31/2016
Office of U.S. Foreign Disaster Assistance	Build two ETUs	World Food Program	1,500,000	1,500,000	11/12/2014	12/31/2016
Office of U.S. Foreign Disaster Assistance	Establish a logistics staging area in Ghana, national hubs in the capitals of Guinea, Liberia, and Sierra Leone, and forward logistics bases in affected countries	World Food Program	1,000,000	1,000,000	11/12/2014	12/31/2016

Office of U.S. Foreign Disaster Assistance	Promote healthcare worker training and adequate personal protective equipment supplies to health facilities in 10 prefectures	World Health Organization	19,626,849	19,626,849	4/1/2015	6/30/2016
<b>Liberia</b>						
Office of U.S. Foreign Disaster Assistance	Support for safe burial teams, oral swabbing for Ebola, cross border monitoring, and strengthen county and district health workers' capacity	Global Communities	34,039,820	34,039,820	8/13/2014	4/30/2016
Office of U.S. Foreign Disaster Assistance	Train and mentor county health teams to develop capacity to respond to the reemergence of Ebola while strengthening health worker skills in the treatment of other infectious diseases	International Medical Corps	3,027,822	3,027,822	10/8/2014	4/30/2016
Office of U.S. Foreign Disaster Assistance	Support comprehensive training for Ebola response workers, including instruction for healthcare workers and response actors in operating ETUs	International Medical Corps	5,934,800	5,934,800	10/8/2014	4/30/2016
Office of U.S. Foreign Disaster Assistance	Enhance screening and surveillance capacity at borders and in border communities in Liberia	International Organization for Migration	6,143,897	6,143,897	7/1/2015	6/30/2016
Office of U.S. Foreign Disaster Assistance	Expand and modify activities by the Montserrado Consortium, including enhanced surveillance and response capacity and efforts to reduce stress and stigma for Ebola-affected families	International Rescue Committee	4,170,584	4,170,584	9/1/2014	3/31/2016
Office of U.S. Foreign Disaster Assistance	Support for response organizations in Montserrado County, including contact tracing, emergency dispatch, dead body removal, and IPC monitoring visits	International Rescue Committee	4,093,690	4,093,690	9/1/2014	3/31/2016
Office of U.S. Foreign Disaster Assistance	Provide clinical care to EVD patients in Monrovia	International Rescue Committee	10,402,487	10,402,487	10/1/2014	4/30/2016

Office of U.S. Foreign Disaster Assistance	Support for Redemption Hospital	International Rescue Committee	1,695,100	1,695,100	10/1/2014	4/30/2016
Office of U.S. Foreign Disaster Assistance	Support Ebola prevention and response activities in Montserrat, Liberia	International Rescue Committee	2,969,196	2,969,196	9/1/2014	3/31/2016
Office of U.S. Foreign Disaster Assistance	Support for the Rapid Response Consortium activities, including infection prevention and control, dead body management, care and treatment, epidemiological surveillance, contact tracing, quarantine support, survivor discharge support, and coordination.	International Rescue Committee	8,679,133	8,679,133	1/1/2016	12/31/2016
Office of U.S. Foreign Disaster Assistance	Support for IPC and waste management training for primary healthcare facilities	MENTOR	2,327,902	2,327,902	10/10/2014	3/31/2016
Office of U.S. Foreign Disaster Assistance	Support for emergency infection control and case management assistance for slum communities	MENTOR	1,598,314	1,598,314	10/10/2014	3/31/2016
Office of U.S. Foreign Disaster Assistance	Build public awareness of Ebola and other preventable diseases through grassroots social mobilization effort that engages civil society actors	Mercy Corps	12,000,000	12,000,000	7/11/2015	7/10/2016
Office of U.S. Foreign Disaster Assistance	Operate and manage ETU in Ganta, Nimba County	Project Concern International	5,675,372	5,675,372	12/16/2014	4/30/2016
Office of U.S. Foreign Disaster Assistance	Provide medicines and WASH supplies to ETUs and community care centers	UN Children's Fund (UNICEF)	30,802,089	30,802,089	12/9/2014	6/30/2016
Office of U.S. Foreign Disaster Assistance	Support personal protective equipment and logistics pipeline, IPC training, county-level surveillance and coordination, transport system for EVD lab samples, and psychosocial activities	World Health Organization	35,000,000	35,000,000	3/25/2015	3/31/2016

Sierra Leone						
Office of U.S. Foreign Disaster Assistance	Support surveillance and screening activities at land, air, and sea borders to prevent cross-border Ebola transmission in Sierra Leone	International Organization for Migration	920,000	920,000	6/2/2015	4/30/2016
Office of U.S. Foreign Disaster Assistance	Support surveillance and screening activities at land, air, and sea borders to prevent cross-border Ebola transmission in Sierra Leone	International Organization for Migration	1,310,000	1,310,000	6/2/2015	4/30/2016
Office of U.S. Foreign Disaster Assistance	Support community-level surveillance and investigation of possible Ebola events in nine districts in Sierra Leone	International Rescue Committee	2,729,036	2,729,036	8/1/2015	3/31/2016
Office of U.S. Foreign Disaster Assistance	Train healthcare workers on IPC at 1100 peripheral health units in Sierra Leone	International Rescue Committee	5,369,850	5,369,850	7/1/2015	5/15/2016
Office of U.S. Foreign Disaster Assistance	Train staff on IPC at 18 government hospitals in Sierra Leone	International Rescue Committee	5,288,573	5,288,573	2/16/2015	5/15/2016
Office of U.S. Foreign Disaster Assistance	Support UN Humanitarian Air Service, transport and mobile warehousing units for EVD response supplies, and specimen transport	World Food Program	20,000,000	20,000,000	1/29/2015	6/30/2016
Mitigate Second Order Impacts of the Crisis						
Regional						
Food for Peace	Support for early warning, analysis, and reporting on acute food insecurity	Chemonics/ FEWSNet	2,874,194	2,865,965	9/15/2015	3/3/2017
Food for Peace	Nutritional support for acutely malnourished children	UNICEF	3,935,510	3,374,348	6/22/2015	6/21/2016
Food for Peace	Food assistance for EVD-affected Ivorian returnees from Liberia and host communities in Cote d'Ivoire	World Food Program	3,000,000	3,000,000	4/1/2015	12/31/2016

Global Development Lab	The Accra Data Harmonization Summit (May 18-22 in Accra, Ghana) focused on health information sharing policies, tools and standards to improve the region's ability to respond to current and future outbreaks. This four-day technical workshop was held to advance a common consensus and agenda on data harmonization for health information systems interoperability in the West Africa region. It led to the creation of action plans for HIS development in West Africa and commitments from governments to invest in health information systems and digital infrastructure.	Carolina Population Center at UNC, Chapel Hill	142,381	142,381	7/1/2015	6/28/2019
Global Development Lab	Support for the Ebola-related "Strengthening Health Information Systems toward Interoperability in the West Africa Region" Broad Agency Announcement (BAA) Addendum, including communications campaign and a workshop. The workshop, an essential step in the open competition process for the BAA, engaged private sector partners who submitted expressions of interest in developing specific innovative solutions to strengthen interoperability of health information systems in the West Africa region.	DAI	178,610	12,395	9/24/2014	9/26/2018



Global Development Lab	Learning agenda focused on the use of data and digital technologies in the crisis response. This work will result in the publication of a series of papers and a final report that will identify actionable recommendations on the use of data and digital systems in future response efforts	FHI 360	100,000	100,000	9/30/2012	9/29/2017
Global Development Lab	Support meetings on Interoperability Standards whereby participants collaborated on action plans to integrate technology into frontline health reporting, and to support community health workers.	mPowering Frontline Health Workers	72,000	72,000	3/17/2014	3/16/2019
Global Development Lab	Provide guidance on information communications technology policy to facilitate implementation of health information system advancements being made by the Government of Liberia	NetHope	13,769	13,769	9/30/2015	9/29/2020
Global Development Lab	Analysis of information communications technology issues and challenges that resulted in health system and health information management failures in the Ebola affected countries. This work provided USAID and partners with data-driven recommendations for Ebola recovery information communications technology work to enable the global community and Ministries of Health to effectively detect, prevent and respond to future outbreaks	United Nations Foundation	996,389	996,389	10/1/2014	9/30/2019

Global Health	Develop repurposed shipping containers as scalable, rapidly deployable and potentially semi-permanent ETUs that include training and process pathways, as well as patient and supply tracking systems	Baylor College of Medicine	613,927	613,927	5/29/2015	5/28/2016
Global Health	Develop colored bleach mist formula to visualize sprayed surfaces and ensure proper coverage and decontamination	Columbia University	649,342	649,342	7/8/2015	12/30/2017
Global Health	Develop open source mobile platform that supports health data collection, decision support, client tracking, SMS communication, and map-based visuals to alleviate current communication burden and disconnect	Dimagi, Inc.	298,996	298,996	5/22/2015	5/21/2016
Global Health	Develop a new clothing system for improved heat stress relief, full body liquid integrity, and ease of doffing	International Personnel Protection	243,205	243,205	5/22/2015	4/21/2016
Global Health	Leverage health information system and mobile phones to support frontline health workers	IntraHealth International	700,000	700,000	6/9/2015	6/8/2016
Global Health	Develop safer and faster doffing personal protective equipment for frontline health workers and design new personal protective equipment for community and family care	Johns Hopkins University	793,635	793,635	9/26/2012	9/25/2017
Global Health	Develop modular and rapidly deployable treatment units that use technology to moderate unit temperature and simplify decontamination efforts for safer, more comfortable conditions	Modula S Inc.	500,000	500,000	5/1/2015	4/30/2019

Global Health	Develop wearable technologies, including a disposable, Bluetooth-enabled sensor that attaches like a band-aid and allows for remote monitoring of Ebola patients' critical vital signs	Scripps Health	632,058	632,058	6/9/2015	6/8/2016
Global Health	Develop low-cost, battery-powered infusion monitor that delivers fluids with precision to patients, thereby eliminating the risk of fluid overload and enhancing survival	Shift Labs, Inc.	318,682	318,682	12/22/2014	12/21/2019
Global Health	Develop state-of-the-art, easy-to-assemble chambers that decontaminate health care workers and equipment in less than three minutes without hazardous chemicals	TOMI Environmental Solutions, Inc.	559,003	559,003	11/18/2014	11/17/2017
<b>Guinea</b>						
Food for Peace	Provide food vouchers for emergency food assistance and market support	Catholic Relief Services	3,253,136	3,253,136	2/24/2015	9/30/2016
Food for Peace	Support for Ebola emergency and recovery school feeding program	World Food Program	7,182,907	7,182,907	3/25/2015	12/31/2016
Global Development Lab	Embedded two expert advisors in the Guinea Ministry of Health to develop health information strategies and data-driven decision making processes	Carolina Population Center at UNC, Chapel Hill	500,000	500,000	7/1/2014	6/28/2019
Global Health	Increase the availability and quality of health service delivery data, and institutionalize data-driven decision-making	Carolina Population Center at UNC, Chapel Hill	2,000,000	2,000,000	7/1/2014	6/30/2019

Global Health	Restore basic health services	JHPIEGO Corporation	6,000,000	6,000,000	3/1/2014	3/1/2019
Global Health	Support for social mobilization and behavior change communications	Johns Hopkins University Center for Communication Programs	5,500,000	5,500,000	9/26/2012	9/25/2017
Guinea	Strengthen civil society to promote public dialogue regarding electoral processes	Consortium for Elections and Political Process Strengthening	1,500,000	1,500,000	8/26/2015	8/31/2016
Guinea	To support credible, participatory, transparent, peaceful, and fair elections	Search for Common Ground	500,000	500,000	9/27/2012	8/31/2016
<b>Liberia</b>						
Food for Peace	Support targeted cash transfers, cash-for-work, and agricultural input vouchers for emergency food assistance and market recovery	ACDI/VOCA	9,000,000	8,999,973	3/17/2015	6/9/2016
Food for Peace	Support targeted cash transfers and agricultural input vouchers for emergency food assistance and market recovery	Mercy Corps	8,970,000	8,970,000	1/7/2015	12/31/2015
Food for Peace	Support targeted cash transfers, cash-for-work, and agricultural input vouchers for emergency food assistance and market recovery	Project Concern International	8,030,564	8,030,564	2/12/2015	9/11/2016
Food for Peace	Support targeted cash transfers and agricultural input vouchers for emergency food assistance and market recovery	Save the Children	4,574,526	4,574,526	8/31/2015	11/30/2016
Food for Peace	Support for Ebola emergency and recovery school feeding program	World Food Program	7,370,323	7,370,323	4/22/2015	10/31/2016

Food for Peace	Support relief and recovery operation for EVD-affected Ivorian refugees	World Food Program	8,921,600	8,921,600	3/7/2014	4/30/2016
Global Development Lab	Innovation and communication technology workshop in Liberia attended by government and private sector parties to develop recommendations addressing policy and market challenges impeding the build out of communications infrastructure, and started the process of developing a new communications infrastructure to strengthen overall health systems and enable more timely information and response to future outbreaks	Alliance for Affordable Internet	20,000	20,000	8/5/2013	8/4/2016
Global Development Lab	Embedded two expert advisors in Liberia's MOH, Health Monitoring and Evaluation Research unit, to develop health information system strategies and data-driven decision making processes	Carolina Population Center at UNC, Chapel Hill	500,000	500,000	7/1/2014	6/28/2019
Global Development Lab	Develop Liberia's information and communications technology capacity to better respond to future disease outbreaks by strengthening policy, infrastructure, connectivity in the country	NetHope	80,377	80,377	9/30/2015	9/29/2020
Global Health	Restore routine health service delivery and strengthen IPC practices at up to 61 health facilities	JHPIEGO Corporation	10,500,000	10,500,000	3/1/2014	3/1/2019

Global Health	Restore routine health services, increase utilization of health services, and expand health worker capacity and capability	International Rescue Committee and Partners	7,000,000	7,000,000	2/23/2015	2/22/2020
Global Health	Support social mobilization and behavior change communication at the national and sub-national levels	Johns Hopkins University Center for Communication Programs	2,600,000	2,600,000	9/26/2012	9/25/2017
Global Health	Strengthen routine immunization services and capacity	UN Children's Fund (UNICEF)	2,000,000	2,000,000	9/1/2007	9/1/2020
Liberia	Rehabilitation of water infrastructure in Voinjama, Liberia	United Infrastructure Projects	9,200,560	9,200,560	2/1/2016	1/31/2019
<b>Sierra Leone</b>						
Food for Peace	Distribute Title II and locally procured corn soy blend to children at risk of moderate acute malnutrition, support for agricultural input vouchers, seed loans to agricultural business centers, and targeted cash transfers	ACDI/VOCA	9,000,000	9,000,000	4/14/2015	4/13/2016
Food for Peace	Support targeted cash transfers for emergency food assistance and market recovery	CARE	2,769,546	2,769,546	8/15/2015	11/15/2016
Food for Peace	Support targeted cash transfers for emergency food assistance and market recovery	Catholic Relief Services	2,462,296	2,462,296	8/26/2015	1/31/2017
Food for Peace	Support targeted cash transfers and cash grants to traders for emergency food assistance and market recovery	Save the Children	4,384,010	4,384,010	3/1/2015	12/31/2016

Food for Peace	Support targeted cash transfers and agricultural input vouchers for emergency food assistance and market recovery	World Vision	3,585,767	3,585,767	7/28/2015	1/27/2017
Global Development Lab	Embedded two expert advisors in the Sierra Leone MOH to provide dedicated technical and organizational support to improve interoperability between health information systems	Carolina Population Center at UNC, Chapel Hill	500,000	500,000	7/1/2014	6/28/2019
Global Development Lab	Support the implementation of mHero, a two-way communication and information sharing tool, in Sierra Leone at the national and sub-national level	Intra Health	250,000	250,000	6/9/2015	6/8/2016
Global Development Lab	Embedded a Senior Health Advisor from the World Health Organization into Sierra Leone's MOH to provide recommendations and propose solutions to address gaps in MOH and donor health information systems. This activity will inform regional health information systems standards	WHO	399,986	399,986	9/11/2009	9/29/2020
Global Health	Support for citizen engagement platform to develop effective behavior change policies	IBM Research	526,355	526,355	7/16/2015	6/8/2016
Global Health	Support social mobilization and behavior change communication at the national and sub-national levels	Johns Hopkins University Center for Communication Programs	5,000,000	5,000,000	9/26/2012	9/25/2017
Global Health	Restore basic health services	JSI Research and Training Institute	15,000,000	15,000,000	10/1/2012	9/30/2017

Global Health	Restore and expand public health supply chain capability	Management Sciences for Health	3,000,000	3,000,000	9/1/2011	9/1/2016
Global Health	Procure essential medications and commodities for the Government of Sierra Leone	UN Children's Fund (UNICEF)	4,500,000	4,500,000	9/1/2007	9/1/2020
<b>Strengthen Global Health Security</b>						
<b>Regional</b>						
Global Health	Build capacity of the Government of Cote d'Ivoire to prepare and respond to infectious diseases outbreaks	ABT Associates, Inc.	550,000	550,000	9/1/2012	9/1/2017
Global Health	Strengthen surveillance systems to detect and monitor highly infectious diseases, particularly epidemic-prone diseases like Ebola	Carolina Population Center at UNC, Chapel Hill	1,400,000	1,400,000	7/1/2014	6/30/2019
Global Health	Support for West African Regional and in-country Ebola preparedness workshops	DAI	2,002,000	2,002,000	10/1/2014	9/30/2019
Global Health	Develop and maintain the capacity and skills to prevent, detect, and respond to pandemic threats at the regional, national, and subnational levels in West Africa	DAI	21,000,000	21,000,000	10/14/2014	9/19/2019
Global Health	Support for surveillance, capacity strengthening, and risk modeling to identify if livestock are associated with evolution, spillover, amplification, or spread of Ebola in West Africa	Food and Agriculture Organization	49,950,000	49,950,000	9/1/2006	4/30/2019



Global Health	Build the capacity of community health workers to deliver services observing updated IPC guidelines	JHPIEGO Corporation	1,500,000	1,500,000	3/1/2014	3/1/2019
Global Health	Strengthen the capacity of country health communication programs to detect and respond to epidemic-prone diseases such as Ebola	Johns Hopkins University Center for Communication Programs	1,100,000	1,100,000	9/1/2012	9/1/2017
Global Health	Develop Ebola communication materials, including community care campaigns	John Hopkins Center for Communication Programs	4,888,500	4,888,500	9/26/2012	9/25/2017
Global Health	Strengthen community-based surveillance systems to detect and monitor Ebola and other epidemic-prone diseases, and provide immediate reporting structures	Management Sciences for Health	4,615,000	4,615,000	9/1/2011	9/1/2016
Global Health	Contribute to the implementation of the Senegal National Response Plan for the prevention of Ebola outbreaks	Pathfinder	536,306	536,306	9/30/2011	9/29/2016
Global Health	Support the detection and control of infectious diseases	Population Services International	1,150,000	1,150,000	4/1/2014	4/1/2019
Global Health	Strengthen epidemic control capacity by training facility- and community-based health workers to detect and report suspect cases of Ebola and other highly infectious diseases	UN Children's Fund (UNICEF)	2,800,000	2,800,000	9/1/2007	9/1/2020
Global Health	Provide longitudinal surveillance and support laboratory capacity building in West Africa	University of California, Davis	49,200,000	49,200,000	10/1/2014	9/30/2019

Global Health	Support university networks to assist government ministries to train the future health workforce, with particular attention to addressing the threat posed by Ebola and other zoonotic diseases	University of Minnesota	24,400,000	24,400,000	11/1/2014	11/1/2019
Global Health	Deploy technical experts to Guinea, Liberia, and Sierra Leone, provide operational and personnel support, and provide 105,000 sets of PPE for health staff and outbreak investigators	World Health Organization, World Health Organization Regional Office for Africa	12,787,500	12,787,500	9/1/2009	9/1/2016
Senegal	Support behavior change communication for pandemic preparedness	ADEMAs	250,000	250,000	3/1/2012	9/30/2016
Senegal	Support for Ebola preparedness activities including organization of health centers and community sites and implementation of community outreach interventions	ChildFund	420,000	420,000	10/1/2011	9/30/2016
Senegal	Support Ebola pandemic preparedness activities including building capacity of health workers and health facilities in IPC, monitoring capacities, and the establishment of an alert platform.	IntraHealth International	330,000	330,000	10/1/2011	9/30/2016

**TABLE NOTES:**

† Program descriptions may refer to multiple awards, and activities under the same award may be reflected under different pillars in the table.

‡ Figures for commitments and obligations may include funding associated with multiple awards.

§ Information from USAID on periods of performance corresponds with dates stipulated in award documents. Ebola-related program activities may have been performed at a later date than the indicated start date for a program. In some cases start dates predate the Ebola outbreak.

## Appendix C: Acronyms

ASPR	Office for the Assistant Secretary for Preparedness and Response, U.S. Department of Health and Human Services
BARDA	Biomedical Advanced Research and Development Authority, U.S. Department of Health and Human Services
CDC	Centers for Disease Control and Prevention, U.S. Department of Health and Human Services
CEBS	Community event-based surveillance
DART	Disaster Assistance Response Team, U.S. Agency for International Development
DHS	U.S. Department of Homeland Security
DoD	U.S. Department of Defense
DOS	U.S. Department of State
eDEWS	Electronic disease early warning system
EPR	Epidemic preparedness and response
ETU	Ebola Treatment Unit
EVD	Ebola Virus Disease
FDA	Food and Drug Administration, U.S. Department of Health and Human Services
FEWS NET	Famine Early Warning Systems Network
FY	Fiscal Year
GAO	Government Accountability Office
GHSA	Global Health Security Agenda
HHS	U.S. Department of Health and Human Services
HIS	Health Information Systems
IHR	International Health Regulations
IMC	International Medical Corps
IRC	International Rescue Committee
IOM	International Organization for Migration
IPC	Infection prevention and control
JEE	Joint External Evaluation
JSTO	Joint Science and Technology Office, U.S. Department of Defense

MCC	Millennium Challenge Corporation
MOH	Ministry of Health
NSC	National Security Council
NIAID	National Institute of Allergy and Infectious Disease, National Institutes of Health, U.S. Department of Health and Human Services
NIH	National Institutes of Health, U.S. Department of Health and Human Services
OFDA	Office of Foreign Disaster Assistance, U.S. Agency for International Development
OIG	Office of Inspector General
PREVAIL	Partnership for Research on Ebola Virus in Liberia
RDT	Rapid Diagnostic Tests
RMT	Response Management Team, U.S. Agency for International Development
RRT	Rapid Response Team
STRIVE	Sierra Leone Trial to Introduce a Vaccine Against Ebola
USAID	U.S. Agency for International Development
WHO	World Health Organization

## Appendix D: Endnotes

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