Introduction

The 2014 Ebola outbreak in West Africa challenged the international community as never before. Its first appearance in this part of the continent, the outbreak was unprecedented for many reasons, but mostly for its scope and duration. After a nearly two and a half year-long effort, 26,000 cases of Ebola had been registered, resulting in over 11,000 deaths.[1] For its part, the United States mounted a "whole-of-government" response, marshalling its collective resources in order to assist its many partners in West Africa in stopping the epidemic. Operation United Assistance, the name of the U.S. military response in support of Liberia, as well as the broader U.S. interagency effort across multiple countries, demonstrated the considerable capabilities that the United States can generate in support of a natural disaster or health emergency.[2]

Ebola had been discovered in central Africa less than 40 years prior. Its first outbreak in 1976 in then-Zaire (now the Democratic Republic of the Congo) had only lasted two months, but had killed 280 persons. As a result of transmission via contaminated needles and syringes in health facilities, the case fatality rate was a shocking 88%.[3] Historically, there had been approximately 20 outbreaks of Ebola with a total of around 2,400 cases and 1,600 deaths. Because these prior outbreaks occurred in remote, largely rural, areas, they were far easier to contain. Ebola's emergence and explosion within impoverished urban areas of West Africa came as a complete surprise.[4]



Map credit: One World - The Nations Online Project
Source: https://www.nationsonline.org/oneworld/map/liberia-map.htm

This case study seeks to present an overview of Operation United Assistance, the U.S. military's response to the Ebola crisis in Liberia. In particular, it will focus on the civil-military coordination and information sharing challenges. Readers who seek additional insight into the response are encouraged to consult the many lengthy studies and after action reviews that exist on the subject.

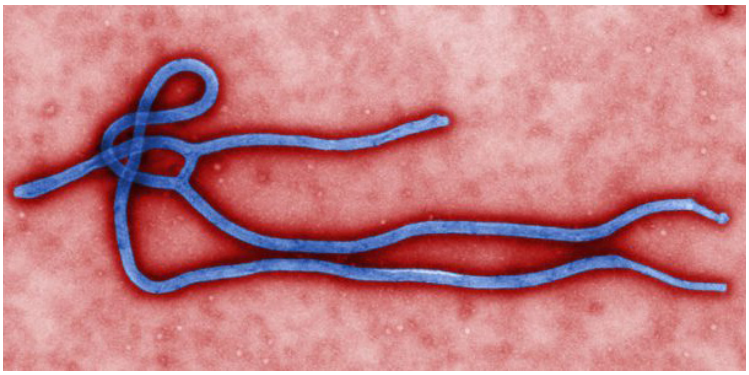
1 Bell BP, Damon IK, Jernigan DB, et al. Overview, Control Strategies, and Lessons Learned in the CDC Response to the 2014–2016 Ebola Epidemic. MMWR Suppl 2016;65(Suppl-3):4–11. DOI: http://dx.doi.org/10.15585/mmwr.su6503a2
2 USAID. "West Africa – Ebola Outbreak Fact Sheet #11." USAID.gov. https://www.usaid.gov/ebola/fy16/fs11 (accessed December 20, 2018).
3 World Health Organization. "Ebola haemorraghic fever in Zaire, 1976." https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2395567/pdf/bull-who00439-0113.pdf (accessed December 20, 2018).
4 Centers for Disease Control and Prevention. "40 Years of Ebola Virus Disease around the World." https://www.cdc.gov/vhf/ebola/history/chronology.html (accessed December 20, 2018).

Situation on the ground

West Africa was ripe for a health emergency of this scale. Liberia and Sierra Leone had both just emerged from years of civil war.[5][6] Liberia is among the poorest nations in the world, with seven out of ten people living on less than $2 per day. More than half of young people aged 15-24 are illiterate, with approximately 73% of all women and girls in Liberia illiterate.[7] The World Health Organization estimated there were only 50 doctors in the entire country at the time of the outbreak, the vast majority of healthcare workers having fled the country during the civil war.[8] This combination of vulnerability and weak coping systems allowed Ebola to explode in the densely populated slums of Monrovia. Equally important, but often overlooked, is the fact that the Ebola response diverted attention from other pressing health concerns such as malaria and diarrheal disease.

About the virus

Named for a river close to where it was first identified in 1976, Ebola is classified as a viral hemorrhagic fever.[9] There are five known Ebola viruses, four of them lethal to humans. Unlike viruses such as influenza or the common cold, Ebola virus is not transmissible via air. Nor is it spread by water or through insect vectors such as mosquitoes. Rather, Ebola virus is spread from person to person through direct contact with blood or other bodily fluids.



Photomicrograph of Ebola virus
Photo credit: CDC
Source: https://www.cdc.gov/vhf/ebola/index.html

Scientists believe the natural reservoir of Ebola is the fruit bat. Infected bats can transmit the virus directly to humans, but are also capable of transmitting the virus to monkeys and apes. Therefore, humans can become infected with the virus when butchering these animals for consumption (bush meat), a common practice in central Africa.[10]

There is no cure for Ebola virus disease. Supportive treatment (maintenance of hydration and electrolytes) is the primary goal of care, patients usually dying from shock due to fluid loss rather than actual blood loss. Complicating treatment, early symptoms of Ebola can be easily mistaken for malaria or other diseases found throughout Africa.[11] There are several different experimental vaccines being trialed in the current outbreak in the Democratic Republic of the Congo.

5 U.S. Department of State. "U.S. Relations with Liberia." https://www.state.gov/r/pa/ei/bgn/6618.htm (accessed December 20, 2018).
6 U.S. Department of State. "U.S. Relations with Sierra Leone." https://www.state.gov/r/pa/ei/bgn/5475.htm (accessed December 20, 2018).
7 World Health Organization. "Liberia." https://www.who.int/countries/lbr/en/ (accessed December 20, 2018).
8 Ibid.
9 Wordsworth, Dot. "How Ebola got its name." The Spectator, https://www.spectator.co.uk/2014/10/how-ebola-got-its-name/ (accessed December 20, 2018).
10 Baylor College of Medicine. "Ebola Virus." https://www.bcm.edu/departments/molecular-virology-and-microbiology/emerging-infections-and-biodefense/ebola-virus (accessed December 20, 2018).
11 Ibid.

Case fatality rates, defined as the proportion of patients with the disease who eventually die, are typically used as a measure of disease severity. The case fatality rate for Ebola, averaged both across all strains of the virus and multiple outbreaks, is approximately 50%. However, case fatality rates in past outbreaks have ranged anywhere from 25% to 90%. The case fatality rate during the West African Ebola outbreak was 39%.[12] Ebola has been designated a Class A bioterrorism agent, along with Lassa and Marburg, two other viruses capable of causing hemorrhagic fevers.[13]

Ebola in Guinea and Sierra Leone

While the 2014 outbreak was sparked in Guinea, Sierra Leone actually experienced the highest number of cases, recording a total of 14,124 infections, including 3,956 deaths.[14] Sierra Leone was a former colony of the United Kingdom with a similar history to that of Liberia. The UK likewise mounted a whole of government response to the Ebola outbreak and partnered closely with their Sierra Leone counterparts.[15] In addition, the UK military launched Operation Gritrock in September 2014 to coordinate the response and construct Ebola treatment centers. Military medics also provided treatment for healthcare workers, training, and security.[16] France, too, provided medical humanitarian assistance to Guinea, its former colonial possession.[17]

It's important to note that the Ebola outbreak that ravaged Liberia, Sierra Leone and Guinea also spread to neighboring countries in the region: Nigeria (Africa's most populous nation), Senegal (a major transit hub), and Mali (extremely poor and beset by civil conflict).[18] However, the cases were quickly contained, in large part due to dedicated local health professionals and CDC's capacity building efforts, further highlighting the importance of the military's partners in the U.S. interagency.[19, 20] Had Ebola become established in or further spread through any of these countries, the outbreak might never have been contained.[21]

12 World Health Organization. "Ebola virus disease" http://www.who.int/news-room/fact-sheets/detail/ebola-virus-disease (accessed December 20, 2018).
13 Centers for Disease Control. "Bioterrorism Agents/Diseases." https://emergency.cdc.gov/agent/agentlist-category.asp (accessed December 20, 2018).
14 Ross E, Welch GH, Angelides P. "Sierra Leone's Response to the Ebola Outbreak." https://www.chathamhouse.org/sites/default/files/publications/research/2017-03-31-sierra-leone-ebola-ross-welch-angelides-final.pdf (accessed December 20, 2018).
15 United Kingdom. "How the UK government is responding to Ebola." https://www.gov.uk/government/topical-events/ebola-virus-government-response/about (accessed December 20, 2018).
16 Ministry of Defence. "How British Armed Forces Helped Fight Ebola in Sierra Leone." https://www.iwm.org.uk/history/how-the-british-armed-forces-helped-fight-ebola-in-sierra-leone (accessed December 20, 2018).
17 Smith-Spark L, Akhoun L. "France's President Francois Hollande visits Ebola-stricken Guinea. CNN.com. https://www.cnn.com/2014/11/28/world/africa/guinea-france-hollande-ebola/index.html (accessed December 20, 2018).
18 Otu A, Ameh S, Osifo-Dawodu E, Alade E, Ekuri S, Idris J. An account of the Ebola virus disease outbreak in Nigeria: implications and lessons learnt. BMC Public Health. 2017;18(1):3. Published 2017 Jul 10. doi:10.1186/s12889-017-4535-x
19 Courage, Katherine H. "How Did Nigeria Quash Its Ebola Outbreak So Quickly?" Scientific American. October 18, 2014. https://www.scientificamerican.com/article/how-did-nigeria-quash-its-ebola-outbreak-so-quickly/ (accessed December 20, 2018).
20 "Google Doodle celebrates Stella Adadevoh's 62nd posthumous birthday." https://www.premiumtimesng.com/news/more-news/292828-google-doodle-celebrates-stella-adadevohs-62nd-posthumous-birthday.html (accessed December 20, 2018).
21 Shah, S. (2016) Pandemic: Tracking Contagions from Cholera to Ebola and Beyond, London, Picador.

"I am running out of words to convey the sense of urgency. The despair is so huge and the indifference so incredible."
-Dr. Joanne Liu, Director, MSF, 10 Oct 2014

Source: *https://www.bmj.com/content/349/bmj.g6151*

Role of Médecins Sans Frontières (MSF)

MSF provides direct medical humanitarian assistance in nations whose healthcare systems are overwhelmed due to natural disaster or conflict. Currently, MSF is actively engaged in over seventy nations around the globe and has provided care to over 100 million patients since its inception in 1971.[22] At the beginning of the outbreak in West Africa in 2014, MSF was one of the few organizations with experience treating patients with Ebola, having responded to multiple outbreaks over the past 20 years. That said, the number of Ebola veterans among MSF's staff numbered only around 40 at the beginning of the West Africa outbreak.[23]

MSF accordingly took a leading role in responding to the outbreak. Later, once the full dimensions of the epidemic were becoming clear, MSF began to raise the alarm with both host nation officials and the international community. In doing so, MSF endured significant criticism from both the World Health Organization, slow to comprehend the magnitude of the outbreak, as well as governments in the region, concerned that fear of the disease would lead to economic losses.

MSF international president Dr. Joanne Liu appealed to United Nations member states on September 2, 2014. *"To curb the epidemic, it is imperative that states immediately deploy civilian and military assets with expertise in biohazard containment. I call upon you to dispatch your disaster response teams, backed by the full weight of your logistical capabilities. We cannot cut off the affected countries and hope this epidemic will simply burn out. To put out this fire, we must run into the burning building."*[24]

It's clear that MSF's forceful advocacy was vital to finally gaining the attention of world leaders and focusing the international community's efforts on the challenge presented by Ebola. Moreover, the medical care MSF provided during the darkest days of the outbreak is testimony to the dedication and skill of many of the NGOs that are often already on the ground in crisis situations.

"The health system in Liberia has collapsed - Pregnant women experiencing complications have nowhere to turn. Malaria and diarrhea, which are easily preventable and treatable, are killing people."
-Dr. Joanne Liu, Director, MSF, 10 Oct 2014

Source: *http://www.msf.org/article/ebola-pushed-limit-and-beyond*

22 Williams C. L. (2015). Leading the charge: Médecins Sans Frontières receives the 2015 Lasker~Bloomberg Public Service Award. The Journal of clinical investigation, 125(10), 3737-41.
23 Ebola: Pushed to the limit and beyond. [March 23, 2015]; [August 21, 2015]; MSF Web site. http://www.msf.org/article/ebola-pushed-limit-and-beyond (accessed December 20, 2018).
24 Ibid.

Whole of Government Effort

In addition to the U.S. military effort, other U.S. interagency partners played critical roles, among them USAID, CDC, NIH, and the U.S. Public Health Service.

The Office of Foreign Disaster Assistance (OFDA), part of the U.S. Agency for International Development (USAID) is designated the lead federal agency during foreign humanitarian crises. In response to the outbreak, USAID deployed Disaster Assistance Response Teams (DART) to Liberia, Guinea, Sierra Leone, and Mali to direct the overall U.S. response. Experts from the U.S. Centers for Disease Control and Prevention (CDC), the U.S. military, and the U.S. Public Health Service also joined the DART teams.[25]

The U.S. Department of State, in Washington DC, at UN headquarters in New York and through their embassies and consulates throughout the world, managed the diplomatic outreach necessary to mobilize the international community. The State Department partnered with major donors, such as the UK, France and Canada, as well as international and non-governmental organizations, to coordinate efforts in support of the governments of Liberia, Sierra Leone, and Guinea. The State Department also worked closely with the UK and France as they assumed larger roles in Sierra Leone and Guinea, respectively.[26]

The U.S. Centers for Disease Control and Prevention (CDC), part of the Department of Health and Human Services (HHS), coordinated technical assistance and disease control activities with its partners in Africa and around the globe. CDC deployed nearly 2,000 personnel to West Africa to directly assist with the response, including surveillance, contact tracing, data management, laboratory testing, and health education. CDC trained nearly 25,000 healthcare workers in West Africa on infection prevention and control practices. CDC also helped to expand laboratory capacity in Guinea, Liberia, and Sierra Leone.[27]

Physicians, nurses, pharmacists and allied health disciplines, members of the U.S. Public Health Service (USPHS) Commissioned Corps, likewise part of HHS, provided treatment for Liberian and international healthcare workers who had become infected with the Ebola virus.[28] Specifically, from September 2014 to May 2015, more than 300 Public Health Service officers delivered direct patient care for those with Ebola, malaria, and other illnesses at the U.S. military-built Monrovia Medical Unit.[29, 30, 31]



Monrovia Medical Unit
Photo credit: U.S. Africa Command
Source: https://www.africom.mil/media-room/article/23746/u-s-air-force-airmen-help-construct-mmu-in-liberia

25 USAID: Ebola Response & Recovery, https://www.usaid.gov/ebola (accessed December 20, 2018).
26 U.S. State Department: The U.S. Government Response to the Ebola Outbreak, https://2009-2017.state.gov/s/dmr/remarks/2014/233996.htm (accessed December 20, 2018).
27 Centers for Disease Control. "CDC Response to Ebola." https://www.cdc.gov/vhf/ebola/history/2014-2016-outbreak/index.html (accessed December 20, 2018).
28 Pierson JF, Kirchoff MC, Orsega SM, et al. Collaboration of the NIH and PHS Commissioned Corps in the International Ebola Clinical Research Response. Fed Pract. 2017;34(8):18-25.
29 The Hope Multipliers: the U.S. Public Health Service in Monrovia. Public Health Rep. 2015;130(6):562-5.
30 Rayman, Noah. "U.S. Clinic in Liberia Will Treat Doctors and Nurses Who Contract Ebola. Time Magazine. November 6, 2014. http://time.com/3560575/u-s-officers-ebola-liberia/ (accessed December 20, 2018).
31 Reed, P., & Giberson, S. (2015). The Monrovia Medical Unit: Caring for Ebola Health Care Workers in Liberia. Disaster Medicine and Public Health Preparedness, 9(1), 1-2. doi:10.1017/dmp.2015.25

The National Institutes of Health (NIH), another component of HHS, is the primary federal agency conducting and supporting basic, clinical, and translational medical research. NIH conducted critical research and development of new Ebola diagnostic, treatment, and preventive tools.[32]

Role of the private sector

The private sector also played a critical role in ultimately bringing the Ebola epidemic to an end. In parallel with the U.S. military's efforts in Operation United Assistance, USAID and other bilateral donors funded the construction, operation and sustainment of multiple Ebola treatment units. USAID in particular contracted with PAE to provide overall logistical and construction support to the U.S. government's efforts in Liberia. PAE, in turn, subcontracted with Aspen Medical to staff and operate the clinics. The U.S. government benefitted from PAE's long history of working in Africa, to include a decade worth of experience in Liberia.[33, 34]

Equally important, as the Ebola epidemic waned, focus shifted from the emergency response to strengthening a Liberian health system gutted by the outbreak. Resources were reallocated from supporting Ebola treatment units to rebuilding health infrastructure throughout the country. Likewise, Operation United Assistance depended heavily on the private sector in constructing the Ebola treatment units and supporting infrastructure. Pre-deployment training and contractor management and oversight in the field were recognized as critical to overall mission success.[35]

Operation United Assistance

Demand for an increasingly robust U.S. response to the growing epidemic had been mounting throughout the first six months of 2014. Beginning in July, the U.S. interagency began ramping up its collective efforts.

In response to a Department of State request, the Joint Chiefs of Staff issued execute order (EXORD) 31 on September 12 for U.S. Africa Command (USAFRICOM) to construct a 25-bed medical unit in Monrovia to offer medical care for Liberian healthcare workers who became infected with Ebola. The Joint Staff subsequently broadened the mission on September 15 (EXORD 32) to encompass a more robust operation that eventually included multiple Ebola treatment units (ETUs) and medical research labs, calling on nearly 3,000 troops in the process. USAFRICOM directed one of its components, U.S. Army Africa (USARAF) to lead the effort.[36, 37]

32 Troiano G, Nante N. Political and medical role in the last Ebola outbreak. J Prev Med Hyg. 2017;58(3):E201-E202.
33 PAE. "Team PAE Fights Ebola in Liberia." February 9, 2016. https://www.pae.com/news/pae-news/team-pae-fights-ebola-liberia (accessed December 20, 2018).
34 Aspen Medical. "Aspen Medical contracted by US Government agencies to keep Liberia Ebola-free." https://www.aspenmedical.com/content/aspen-medical-contracted-us-government-agencies-keep-liberia-ebola-free (accessed December 20, 2018).
35 Center for Army Lessons Learned. "Operation United Assistance, Report for Follow-On Forces." September 2015. https://usacac.army.mil/sites/default/files/publications/15-16.pdf (accessed December 20, 2018).
36 Joint Coalition Operational Analysis. "Operation United Assistance: The DoD Response to Ebola in West Africa." January 6, 2016. http://www.jcs.mil/Portals/36/Documents/Doctrine/ebola/OUA_report_jan2016.pdf (accessed December 20, 2018).
37 Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DM) Humanitarian Assistance Response Training (HART) course. "2014 West Africa Ebola Outbreak: A case study of Operation United Assistance." March 2018.

On September 16, 2014 President Obama, during a visit to CDC headquarters in Atlanta, detailed the overall strategy of the U.S. response. The President cited four goals of the U.S. effort: a.) control the outbreak, b.) address the ripple effects in local communities to prevent a larger disaster, c.) coordinate a broader global response, and d.) strengthen public health systems in impoverished nations. President Obama named Major General (MG) Darryl Williams, Commanding General, USARAF, as commander of the U.S. military portion of the U.S. effort.[38] MG Williams was already in Liberia, having arrived within the previous 24 hours on a fact-finding mission. He thereupon took command of Operation United Assistance, organizing it along four lines of effort: command and control, engineering, logistics, and medical training.[39]

"We Aren't the Lead Sled Dog."
-MG Gary Volesky, JFC-UA, Commanding General

Source: *http://www.jcs.mil/Portals/36/Documents/Doctrine/ebola/OUA_report_jan2016.pdf*

The mission statement of Joint Force Command United Assistance reads as follows:
JFC-UA supports the United States Agency of International Development (USAID) in Liberia to assist the U.S Government's Foreign Humanitarian Assistance / Disaster Relief (FHA/DR) efforts to contain the Ebola Virus Disease (EVD) in order to prevent EVD from spreading outside of the region, alleviate human suffering, and promote internal and regional stability. On order, transition the Joint Force Command (JFC) to designated entities.

Two key elements of the mission statement are worth highlighting. The first is the supporting / supported relationship; U.S. military forces will act in support of the lead federal agency, USAID (specifically its Office of Foreign Disaster Assistance, OFDA). Second, the critical importance of transitioning responsibilities to other actors (i.e., host nation authorities, UN agencies, USAID, non-governmental organizations, etc.) is acknowledged from the outset of the operation.[40]
MG Darryl Williams led JFC-UA for nearly two months before turning over command to the 101st Airborne Division (Air Assault) headquarters, commanded by MG Gary Volesky. In that time, MG Williams' team was able to assess the operational environment, build relationships, initiate operations, identify follow-on requirements, and establish the necessary infrastructure for subsequent forces.[41]

Possessing few military forces of its own, USAFRICOM employed assets from a number of military commands. These included U.S. Transportation Command, Air Mobility Command, U.S. European Command, the Defense Logistics Agency, and Army Materiel Command. In addition, an intermediate staging base was established in Dakar, Senegal.[42]

38 White House: "Remarks by the President on the Ebola Outbreak." https://obamawhitehouse.archives.gov/the-press-office/2014/09/16/remarks-president-ebola-outbreak (accessed December 20, 2018).
39 Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DM) Humanitarian Assistance Response Training (HART) course. "2014 West Africa Ebola Outbreak: A case study of Operation United Assistance." March 2018.
40 Joint Coalition Operational Analysis. "Operation United Assistance: The DoD Response to Ebola in West Africa." January 6, 2016. http://www.jcs.mil/Portals/36/Documents/Doctrine/ebola/OUA_report_jan2016.pdf (accessed December 20, 2018).
41 Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DM) Humanitarian Assistance Response Training (HART) course. "2014 West Africa Ebola Outbreak: A case study of Operation United Assistance." March 2018.
42 Joint Coalition Operational Analysis. "Operation United Assistance: The DoD Response to Ebola in West Africa." January 6, 2016. http://www.jcs.mil/Portals/36/Documents/Doctrine/ebola/OUA_report_jan2016.pdf (accessed December 20, 2018).

"There is no book on responding to this Ebola crisis… we're writing it now."
-Bill Berger, Team Leader for the Ebola Disaster Assistance Response Team

Source: *https://blog.usaid.gov/2014/10/bill-berger-there-is-no-book-on-responding-to-this-ebola-crisis-were-writing-it-now/*

Early challenges that were identified included:

- Incomplete assessment of the operating environment in West Africa (i.e., challenging, austere physical environment)
- Unfamiliarity with operating from immature bases (contrasted with experience in Operations Enduring Freedom and Iraqi Freedom)
- Overreliance on classified computer networks (resulting in an inability to communicate with U.S. interagency partners operating on the internet)
- Centralized (Washington DC) decision-making (leading to delays in mission taskings)

Theater Security Cooperation

Theater security cooperation initiatives in preceding years were critical in building understanding and relationships that were called upon during the epidemic and contributed in great measure to the overall success of Operation United Assistance. In particular, Operation Onward Liberty was a multi-year mentoring and advising mission to assist the Armed Forces of Liberia (AFL) in building a professional military, respectful of the rule of law, and answerable to civilian authority. USAFRICOM leaders later characterized Operation Onward Liberty as constituting the "seed corn" for success in Operation United Assistance.[43] Likewise, British military forces benefitted from relationships established through many years of working with the Republic of Sierra Leone Armed Forces.[44]

Assessment of the Operational Environment

The Joint Staff J7 study of Operation United Assistance also identified shortcomings in the pre-crisis assessment of the operational environment. The USAFRICOM area of responsibility includes 53 nations the length and breadth of Africa (minus Egypt, part of Central Command). Moreover, USAFRICOM, resident in Stuttgart, Germany, lacks a headquarters presence on the continent and, compared with other combatant commands, has few forces formally assigned to it and even fewer forward deployed in Africa. Therefore, the speed, scale and scope of Operation United Assistance generated overwhelming information requirements.[45]

Initial priority intelligence requirements focused heavily on security issues such as force protection, safety of private American citizens, etc. Moreover, there was little prior understanding of in-country capabilities that could support the response, such as construction materials and locally available, commercial-building capabilities that could be contracted out by arriving military forces. This led to a significant underestimation of indigenous capacity resident in Liberia, resulting, in turn, to a far more robust request for forces than was ultimately necessary.[46]

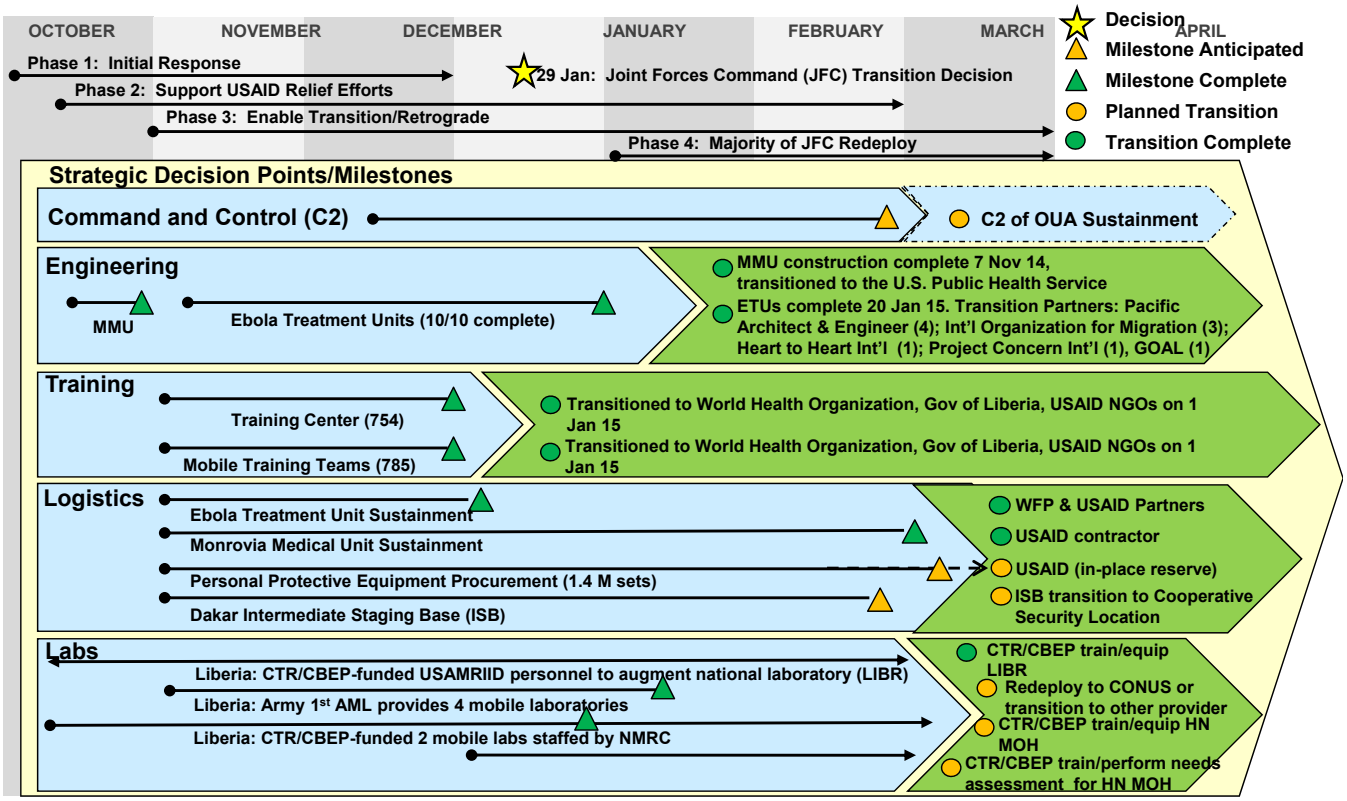
43 U.S. Embassy Monrovia. "Operation Onward Liberty Successfully Concludes Six-Year Engagement." https://lr.usembassy.gov/operation-onward-liberty-ool-successfully-concludes-six-year-engagement/ (accessed December 20, 2018).
44 Ministry of Defence. "How British Armed Forces Helped Fight Ebola in Sierra Leone." https://www.iwm.org.uk/history/how-the-british-armed-forces-helped-fight-ebola-in-sierra-leone (accessed December 20, 2018).
45 Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DM) Humanitarian Assistance Response Training (HART) course. "2014 West Africa Ebola Outbreak: A case study of Operation United Assistance." March 2018.
46 Joint Coalition Operational Analysis. "Operation United Assistance: The DoD Response to Ebola in West Africa." January 6, 2016. http://www.jcs.mil/Portals/36/Documents/Doctrine/ebola/OUA_report_jan2016.pdf (accessed December 20, 2018).

Transition

The importance of transition was built into planning from the very beginning, recalling the final sentence of the mission statement: On order, transition the Joint Force Command (JFC) to designated entities.[47]

The major elements of the transition plan were as follows:

- Mechanisms were put in place and benchmarks established to accomplish transition appropriately.
- USAID identified able partners within the Government of Liberia, among United Nations agencies, and the NGO community to transfer responsibility.
- JFC-UA established specific handover criteria for each specific task.
- Building sustainable capacity was an intentional item of emphasis and prevented an unintentional expansion of tasks and responsibilities (mission creep).



JFC OUA Transition Plan
Source: JCOA Case Study

47 Joint Coalition Operational Analysis. "Operation United Assistance: The DoD Response to Ebola in West Africa." January 6, 2016. http://www.jcs.mil/Portals/36/Documents/Doctrine/ebola/OUA_report_jan2016.pdf (accessed December 20, 2018).

Information sharing

"The use of classified systems is absurd. Everything is on SIPRNET (classified computer network), even if it is unclassified information. It's a mindset, and the resultant amount of time spent on SIPRNET is ridiculous. It's an 80/20 SIPRNET/NIPRNET ratio. . . . We need to get out of the mindset [of defaulting to the classified system] and force ourselves to exercise in an unclassified environment."
-USAFRICOM J-4 (paraphrased)

Source: *http://www.jcs.mil/Portals/36/Documents/Doctrine/ebola/OUA_report_jan2016.pdf*

Information sharing, both within military elements as well as with external partners, constituted a major challenge during Operation United Assistance.
Several are worth noting:

- Overreliance on classified computer networks (even when information was unclassified)
- Inability to communicate amongst military units operating on different networks
- Inability to communicate with U.S. interagency partners operating on the internet
- Limited DOD bandwidth (necessitating use of commercial internet service providers), complicated by reliance on large PowerPoint presentations.
- Unclassified (NIPRNET) applications required use of a common access card (CAC); while enabling authentication it also enforced encryption, thus effectively denying non-CAC users access to Department of Defense online tools.

On the plus side, robust use of liaison officers fostered cooperation and an increased understanding of the roles and missions of partners, thereby improving the effectiveness of the overall effort.[48]

"The biggest impact was the announcement itself and having those boots on the ground, even if the US military hadn't done anything else. The psychological impact was transformative to the Liberians. The change was palpable within 24 hours of the president's announcement."
-Deborah Malac, U.S. Ambassador to Liberia

Source: *http://www.jcs.mil/Portals/36/Documents/Doctrine/ebola/OUA_report_jan2016.pdf*

Strategic Communications

Influencing public perception was an important element in the strategy to combat the Ebola epidemic. Prior to the arrival of U.S. forces, there was a pervasive sense of despair among the people of Liberia. Complicating matters, the Liberian government suffered a major public relations setback when riots broke out in mid-August 2014 in protest of a mandatory quarantine of the slum neighborhood of West Point, in the capital Monrovia. In addition, while the US military's arrival brought hope for most, it also generated rumors that the U.S. would establish a permanent presence or take over the Liberian government.[49]

48 Joint Coalition Operational Analysis. "Operation United Assistance: The DoD Response to Ebola in West Africa." January 6, 2016. http://www.jcs.mil/Portals/36/Documents/Doctrine/ebola/OUA_report_jan2016.pdf (accessed December 20, 2018).
49 Ibid.

Key lessons included the following:

- Unity of message was promoted via joint U.S. Embassy- USAID-DoD public affairs events. Synchronization of communications also served to allay fears, manage expectations, and avoid confusion.
- A key theme was stressing that the U.S. military was in support of the host nation, U.S. interagency, and international partners.
- Recognizing the value of local knowledge resident in the U.S. Embassy public affairs section allowed for more effective messaging to the Liberian audience.
- Public affairs guidance and frequent teleconferences were critical to get everyone in the U.S. interagency speaking from the same talking points.

Lasting impact of Ebola in West Africa

Ebola was ultimately defeated, but exacted a terrible price. And, unfortunately, it claimed its greatest toll among West Africa's children. One-fifth of all Ebola cases occurred in children under the age of 15 years. As a result of school closures, children lost nearly 2,000 hours of education. Children also missed out on routine immunizations. Most sadly, it's estimated that more than 17,300 children were orphaned due to Ebola.[50]

The blow to already fragile healthcare systems, too, was massive. As of November 2015, there were a total of 881 confirmed infections and 513 deaths among health care workers in the three nations combined. Ebola came to be known as the "carer's disease" and claimed fully 8% of Liberia's remaining doctors, nurses, and midwives.[51] Moreover, it's estimated that an additional 10,600 lives were lost to untreated cases of HIV, tuberculosis and malaria, during the course of the epidemic.[52] Finally, according to World Bank figures, as a result of the epidemic Guinea, Sierra Leone and Liberia lost over $2.2 billion in gross domestic product in 2015.[53]

Conclusion

Operation United Assistance demonstrated the preeminent logistical, engineering and command and control capabilities of the U.S. military. The physical contribution to defeating the epidemic was impressive; the construction of mobile laboratories and Ebola treatment units, provision of personal protective equipment and training of healthcare workers. Most importantly, Operation United Assistance communicated to the world that the U.S. would stand shoulder to shoulder with those on the frontlines of the epidemic. This psychological boost served to give Liberians hope that the epidemic could be defeated. Additionally, it gave Liberian healthcare workers confidence that they would be provided the tools they needed to confront the disease and, critically, the care they would require should they contract the illness.

50 Centers for Disease Control and Prevention. "Cost of Ebola." https://www.cdc.gov/vhf/ebola/history/2014-2016-outbreak/cost-of-ebola.html (accessed December 20, 2018).
51 World Health Organization. "Ebola Situation Report, 4 Nov 2015." http://apps.who.int/iris/bitstream/handle/10665/192654/ebolasitrep_4Nov2015_eng.pdf;jsessionid=98FE9A62B804C6241FB49BDA1B78FBD2?sequence=1 (accessed December 20, 2018).
52 Alyssa S. Parpia, M., Martial L. Ndeffo-Mbah, P., Natasha S. Wenzel, M., & Alison P. Galvani, P. Impact of the 2014-2015 Ebola Outbreak on Malaria, HIV, and Tuberculosis in West Africa. Emerging Infectious Diseases
53 World Bank. "Annual GDP Growth." https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG (accessed December 20, 2018).

Though the West Africa Ebola outbreak may have been unprecedented in its breadth and intensity, it is likely not the last time the international community will face such a challenge. In our increasingly connected world, where trade volumes have grown five-fold since 1950 and 2 billion people cross an international border every day, both scientists and policymakers believe it's only a matter of time before another disease emerges to confront our modern world.[54] Operation United Assistance constitutes a valuable case study and potential model for future military support to a civilian-led international health emergency.

"America responded; you did not run from Liberia. Our children are back at school, our borders are open, our women marketers are back at work, our farmers are preparing for the oncoming planting season … and most importantly, our spirits are lifted."
-Ellen Johnson Sirleaf, President of Liberia, in her 26 Feb 2015 address to the U.S. Congress

Source: *https://www.usip.org/publications/2015/02/liberias-president-thanks-us-helping-control-ebola-epidemic*

Current Ebola outbreak in the DRC

The ongoing Ebola outbreak in the Democratic Republic of the Congo (DRC) began August 1, 2018 in the far eastern reaches of the country along its porous borders with South Sudan, Rwanda, and Uganda.[55, 56] Even though this is the tenth outbreak in the DRC, there has never been one in this region of the country. Thus, understanding of the virus is low, and mistrust of outsiders high.[57] Complicating the response is the fact that over 200 languages are spoken in the DRC. Moreover, insecurity, poor transportation infrastructure and over one million refugees and internally displaced persons have combined to make this current outbreak one of the most complex and challenging public health threats the DRC has ever faced.[58, 59, 60]

Confounding the Ebola response is mankind's old nemesis, malaria. The DRC ranks second only to Nigeria in the annual number of cases of malaria. North Kivu province, the epicenter of the current outbreak, has witnessed an eightfold increase in cases of malaria as compared with the same timeframe one year prior. Indeed, nearly 50% of patients screened in Ebola treatment centers were found to be suffering from malaria. This is due to the fact that both Ebola and malaria present with the same constellation of initial symptoms.[61] Further compounding the situation, supplies of a moderately effective, yet still investigational, Ebola vaccine being used in the DRC are running short.[62, 63]

54 Chatham House & British Red Cross. "Civil-Military Relations: A Focus on Health Emergencies and Epidemics." NGO-Military Contact Group Conference, 17 July 2018. https://www.chathamhouse.org/sites/default/files/NMCG-conference-report-2018.pdf (accessed December 20, 2018).
55 Centers for Disease Control and Prevention. "40 Years of Ebola Virus Disease around the World." https://www.cdc.gov/vhf/ebola/history/chronology.html (accessed December 20, 2018).
56 STAT News. "CDC director says he pushed to keep U.S. experts in Ebola zone but was overruled." https://www.statnews.com/2018/10/23/cdc-director-says-he-pushed-to-keep-u-s-experts-in-ebola-zone-but-was-overruled/ (accessed December 20, 2018).
57 Bearak, M. (2018, December 7). 'Like a horror film': The efforts to contain Ebola in a war zone. The Washington Post, Retrieved from https://www.washingtonpost.com/world/africa/like-a-horror-film-the-efforts-to-contain-ebola-in-a-war-zone/2018/12/06/435ee0f4-f738-11e8-8642-c9718a256cbd_story.html (accessed December 20, 2018).
58 World Health Organization. "Malaria control campaign launched in DRC." https://afro.who.int/news/malaria-control-campaign-launched-democratic-republic-congo-save-lives-and-aid-ebola-response (accessed December 20, 2018).
59 JAMA. "New Ebola Outbreak in Africa Is a Major Test for the WHO."
60 JAMA. "Ebola and War in the Democratic Republic of Congo: Avoiding Failure and Thinking Ahead." https://jamanetwork.com/journals/jama/fullarticle/2717586 (accessed December 20, 2018).
61 CIDRAP. "Malaria spike in Ebola zone prompts mass treatment efforts." http://www.cidrap.umn.edu/news-perspective/2018/11/malaria-spike-ebola-zone-prompts-mass-treatment-efforts (accessed December 20, 2018).
62 CIDRAP. "Concerns about Ebola vaccine supply." http://www.cidrap.umn.edu/news-perspective/2018/12/drc-ebola-total-climbs-444-cases-several-areas (accessed December 20, 2018).
63 NIH: NIAID Responds to Ebola Outbreak in the Democratic Republic of the Congo, https://www.niaid.nih.gov/news-events/niaid-responds-ebola-outbreak-democratic-republic-congo (accessed December 20, 2018).

As of December 20, 2018, the outbreak in the DRC had become the second largest in history (second only to the massive 2014 outbreak in West Africa), with 549 total cases and 326 deaths. In addition, 53 healthcare workers have become infected, 18 of whom have died. Worryingly, an additional 82 suspected cases are under investigation, many of them having occurred in the community and outside a clinic, where the risk of transmission is highest. The overall case-fatality rate in the current outbreak is 58%.[64]

This current outbreak in the DRC also underscores an important fact: 80% of disease outbreaks occur within the context of complex emergencies, humanitarian emergencies complicated by armed conflict.[65] Operation United Assistance had the good fortune to be conducted in a benign security environment, a luxury that might not exist in future outbreaks.

Looking ahead

It's critical that key lessons are captured from each disaster response. However, it's even more vital for military and civilian responders to carefully note these lessons and incorporate them into procedures and training exercises such that mistakes aren't repeated. While some lessons may well turn out to be unique to a particular disaster response, others quite often highlight recurring challenges.

"Lessons that should have been learned in the mass cholera epidemic in Haiti four years ago were not."
-Dr. Joanne Liu, MSF

Source: *https://www.theguardian.com/global-development/2015/mar/23/ebola-crisis-response-aid-who-msf-report-sierra-leone-guinea*

This and other CFE case studies are intended to better inform U.S. Indo-Pacific Command and their military and civilian partners in anticipation of future disaster preparedness and response operations. It's hoped that the civil-military coordination and information sharing challenges enumerated herein, as well as their potential solutions, can be applied in future emergences, thus increasing the speed, volume and effectiveness of response, in turn, saving lives and alleviating human suffering.

64 CIDRAP. "Seven new cases and deaths in DRC Ebola Outbreak." http://www.cidrap.umn.edu/news-perspective/2018/12/seven-new-cases-and-deaths-drcs-ebola-outbreak (accessed December 20, 2018).
65 Chatham House & British Red Cross. "Civil-Military Relations: A Focus on Health Emergencies and Epidemics." NGO-Military Contact Group Conference, 17 July 2018. https://www.chathamhouse.org/sites/default/files/NMCG-conference-report-2018.pdf (accessed December 20, 2018).

Questions for Discussion

1. *What are the most important lessons learned from Operation United Assistance that U.S. Indo-Pacific Command should implement in future natural disaster or health emergency responses?*
2. *How does military support to foreign humanitarian response differ in a natural disaster as compared to a health emergency? How is it the same?*
3. *Why is it important or necessary to follow the lead of the host nation / affected state in a disaster response?*
4. *Discuss the practical and ethical issues with respect to force health protection in the context of military support to a health emergency.*
5. *Both U.S. Indo-Pacific Command and U.S. Africa Command suffer from a tyranny of distance. How is this best mitigated?*
6. *Who were they and what roles did our U.S. interagency partners play in Operation United Assistance?*
7. *What is the importance of thinking about transition from the very beginning of an operation?*
8. *How can regional arrangements strengthen future disaster response efforts?*
9. *What international, intergovernmental and non-governmental organizations might you expect to collaborate with in a future disaster response in the Asia-Pacific? Does the private sector have a role to play?*

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