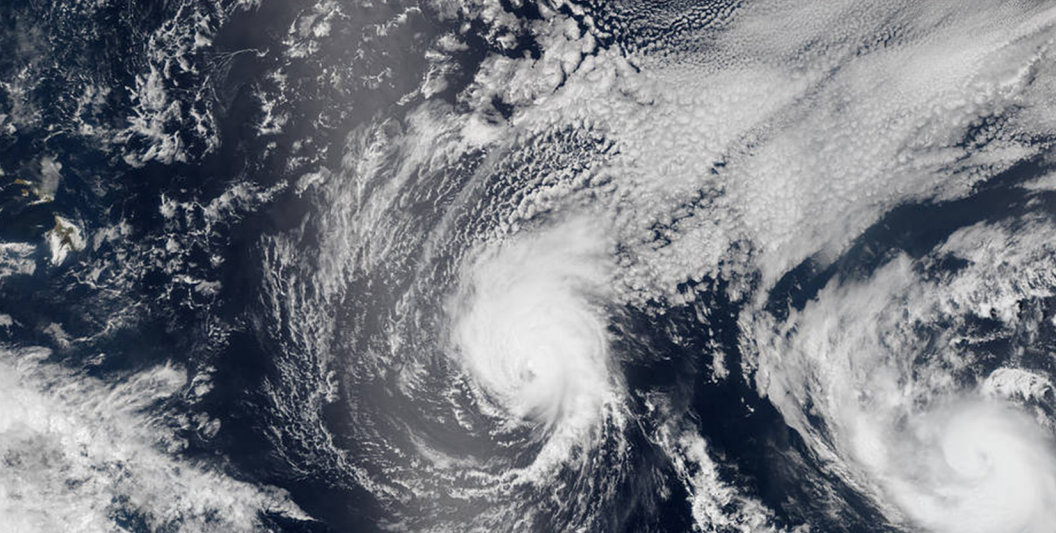
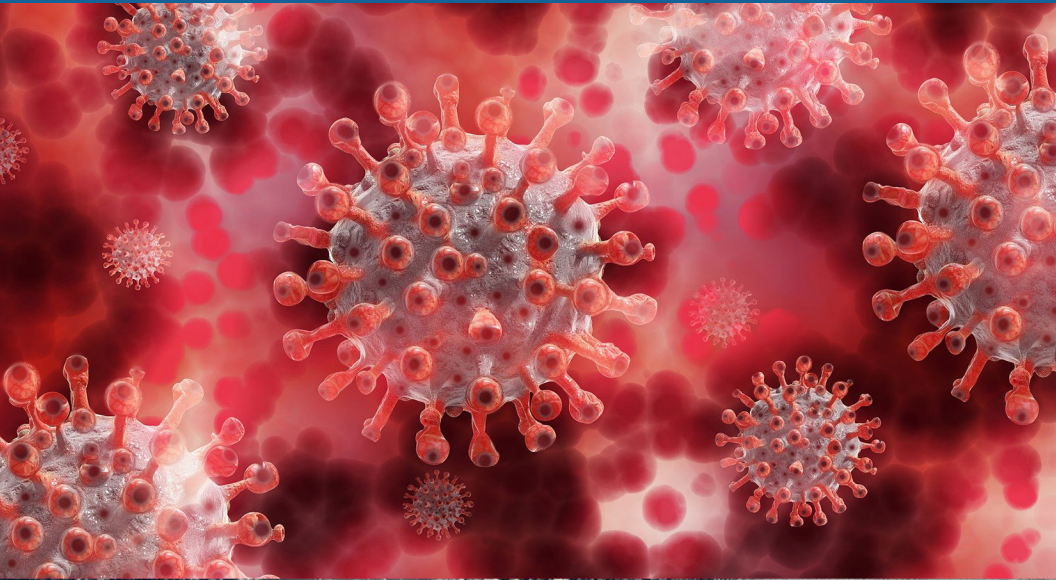




CENTER FOR EXCELLENCE
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**BEST PRACTICES FOR HUMANITARIAN ASSISTANCE
AND DISASTER RELIEF (HADR) IN PANDEMICS**



Series of Best Practices Pamphlets by CFE-DM



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Executive Summary

Purpose: To provide a condensed set of best practices and recommendations for the U.S. Department of Defense (DoD) to support humanitarian assistance and disaster relief (HADR) in pandemics.

Key Points:

Some things remain the same supporting HADR, in pandemics or not:

- Logistics – This remains the DoD's main lane and strength. Foreign military assets (FMA) should provide unique capabilities.
- Unclassified Information -- Keep information unclassified, and use unrestricted systems, as much as possible in HADR operations. Otherwise, critical information sharing with civilian partners is severely hampered.
- DoD is in support of the United States Agency for International Development (USAID) Bureau for Humanitarian Assistance (USAID/BHA) during foreign disaster relief and should coordinate closely to leverage their disaster expertise and for smoother whole-of-government response.
- Respect humanitarian principles -- Militaries engaging in foreign disaster relief should respect humanitarian principles.

Some things are different:

Localization versus large-scale International Disaster Response – A range of supporting responses may be seen, directly or indirectly, for HADR amid disease outbreaks or to the outbreak itself. The two case studies in this pamphlet explore very different responses amid outbreaks:

- A localized response was seen in Vanuatu for Tropical Cyclone Harold in April 2020 with some international relief supplies received but no international personnel arriving from outside the country, due to COVID-19 restrictions.
- DoD deployed to Liberia in 2014 in response to the Ebola epidemic.

Force Health Protection (FHP) – Plan for a range of possible FHP concerns that may affect logistics, direct support, remote support, and interagency or international coordination. Considerations can include procuring personal protective equipment (PPE) in the right amount, type, and sizes. Partner nations' and organizations' health and safety protocols may impose constraints on how the mission can be executed. Compare the DoD HPCON (Health Protection Condition) with other U.S. government agency measures and international guidance, to facilitate USG interagency cooperation and international coordination.

Security Cooperation – Many issues are long-term and apply across a range of disasters and phenomena. Security cooperation activities can leverage support to cross-cutting issues. Coordination with USAID is key, and many of their

programs and efforts relate to disaster risk reduction, strengthening health systems, climate change adaptation, etc.

Military planning – Planning should factor in the likelihood of more frequent and severe disasters exacerbated by climate change, as well as more frequent or recurring epidemics and pandemics. Contingency planning should account for more extreme scenarios.

Military exercises – Include scenarios with Pandemic and Emerging Infectious Disease (PEID), and also combined with foreign disaster relief or foreign humanitarian assistance. Consider complex scenarios with simultaneous or successive disasters/crises.



The DoD Ebola Training Team, comprised of service members from the Army, Air Force and Navy, train the first class of volunteers who will staff Ebola treatment units in Liberia, 30 OCT 2014, at the National Police Training Center, Paynesville, Liberia. U.S. Army photo by Sgt. 1st Class Nathan Hoskins.

Introduction

The relevant issues are cross-cutting:

Pandemics, Climate Change, Disasters and Crises are linked

While this pamphlet looks at supporting HADR in pandemics, we cannot treat communicable diseases as an isolated single issue. Relevant issues include climate change, disasters and conflicts, building local capacity, applying a gendered analysis, and facilitating broad-based participation across all social demographics. These issues are cross-cutting. Both disasters and pandemics affect populations disproportionately and exacerbate vulnerabilities. We should strive to encourage thinking outside silos and to incorporate a social ecology or systems approach to understand constellations of multiple relevant issues, leading to better planning and analysis.

- DoD should factor increasing disasters and pandemics exacerbated by climate change into their future planning regarding responding to HADR with different environmental constraints.
- DoD should consider a wide range of potential force health protection considerations for different scenarios.

Outcomes improve with broad-based, bottom-up participation

Experience shows that including women, youth, people with disabilities, and people from multiple ethnicities and demographics in decision-making across disaster prevention and response, including pandemics, improves outcomes across society. This creates a “circle of good”:

1. Broad-based participation leads to greater social resiliency for the whole community. Increased resiliency strengthens disaster risk reduction, mitigation and recovery, and eases strain on health systems.
2. Involving people from what may be a society’s more vulnerable groups, often due to structural inequalities, protects them from increased risk of harm. Strengthen DoD planning by including input from USAID, gender advisors (GENAD), and potential civil society or NGO partners.
3. Responses planned and implemented with broad community decision-making and input lead to more sustainable solutions.

Background

Pandemics and climate change are linked issues that influence each other, often in indirect ways. “We don’t have direct evidence that climate change is influencing the spread of COVID-19, but we do know that climate change alters how we relate to other species on Earth and that matters to our health and our risk for infections... that creates an opportunity for pathogens to get into new hosts. Many of the root causes of climate change also increase the risk of pandemics.”³ Development and expansion of human habitat creates more wildlife-human interfaces, which facilitate opportunities allowing for zoonotic viruses to jump to human hosts. The global economic impact of the COVID-19 pandemic is also increasing challenges to fund initiatives to mitigate climate change.⁴

Long before the emergence of COVID-19, climate change was recognized for altering the environment in such a way as to facilitate the spread of vector-borne diseases. “Climate change has already made conditions more favorable to the spread of some infectious diseases, including Lyme disease, waterborne diseases such as *Vibrio parahaemolyticus* which causes vomiting and diarrhea, and mosquito-borne diseases such as malaria and dengue fever.”⁵ Mosquitos that transmit dengue, malaria, chikungunya, zika, and other diseases are able to thrive in more areas now due to global warming. Dengue has steadily been increasing globally over the past few decades.⁶ While malaria⁷ had been on the decline, in recent years malaria cases have been on the rise again.⁸ The COVID-19 pandemic has demanded global attention and resources to such an extent that routine immunizations of other diseases have been interrupted and have declined. Along with viral and bacterial diseases, emerging fungal pathogens are a risk to human health, environment and food security. Since the COVID-19 pandemic, over 8,400 cases of the usually rare black fungus infection have been recorded in India, with the rise attributed to increased use of steroids to treat COVID-19. Fungal infections have limited treatment options, with no vaccines and a few anti-fungal agents. They are easily spread during natural disasters such as cyclones and floods, and exacerbated by climate change as seen with the pathogens’ evolving heat tolerance.⁹ Additionally, the pre-existing pandemic of HIV/AIDS still poses a challenge for many countries. COVID-19 infection in HIV patients can potentially last many months longer than usual due to their immunocompromised condition,¹⁰ creating the opportunity for more coronavirus mutations leading to COVID-19 variants, which is considered the likely origin of Omicron.¹¹

Given the disruptive nature of pandemics, they can potentially exacerbate existing crises.¹² The International Crisis Group points out a range of concerns between COVID-19 and conflict, including increased vulnerability of displaced persons, weakening of international institutions that serve conflict-affected areas, risks to social order, and exploitation of the pandemic to solidify political power.¹³

One effect disaster management is seeing from climate change is that although individual fatalities may be down, the emerging stress on systems and communities is that disasters are coming one after another. In the last three months of 2020, the Philippines experienced eight tropical cyclones, of which seven traversed Luzon: Tropical Storm Nika (locally known as Nangka), Typhoon Pepito (Saudel), Typhoon Quinta (Molave), Super Typhoon Rolly (Goni, the strongest typhoon of the year),¹⁴ severe tropical storm Siony (Atsani), Tropical Storm Tonyo (Etao), Typhoon Ulysses (Vamco),¹⁵ and Tropical Storm Krovanh (Vicky).¹⁶ While the Philippines averages 19-20 tropical cyclones per year, the frequency and intensity of these storms in a short period of time was striking. Similarly, COVID-19 is proving a long-term systemic challenge. Consider this setting when the next pandemic arrives. Future disasters arriving in quicker succession may push us to reevaluate our definitions of crisis/disaster beginning and end points.¹⁷ Contingency planning may have to take into account more extreme scenarios.

Disasters and pandemics both exacerbate the plight of the most vulnerable. Natural disasters kill more women than men and lower women's resulting life expectancy more on average. This directly correlates with the level of gender inequality in the disaster-affected society. The higher women's status and the smaller the gender gap, the smaller is the differential negative affect of disasters on women versus men.¹⁸ The COVID-19 pandemic has a range of gendered effects, including rising rates of gender-based violence.¹⁹ The economic impact of COVID-19 also has gendered dimensions, as women often bear greater caregiving responsibilities amid lockdown and remote work or school as well as comprise a greater part of the informal economic sector, which has been hard hit in the pandemic. Just as the issues relating to disasters and pandemics are complex, linked and cross-cutting, so must be the solutions. More sustainable recoveries will involve input and decision-making that representatively reflects the society's demographic range, including men, women, boys and girls from various ethnicities, religions, and including those living with disabilities.²⁰

Best Practices

USAID's Bureau for Humanitarian Assistance (BHA)

The United States Agency for International Development (USAID)/ Bureau for Humanitarian Assistance (BHA, formerly the Office of U.S. Foreign Disaster Assistance) is the U.S. government lead federal agency in foreign disaster relief (FDR). Among the foreign disasters that the U.S. government responds to, the DoD supports in approximately 10% of responses, in which case the DoD deploys in support of USAID/BHA. BHA has a wealth of expertise in disaster response, which ensures DoD assets are used effectively and efficiently in support of disaster response. Furthermore, USAID has experience with strengthening health systems, which may benefit some DoD planning regarding epidemics.

Best Practice: DoD works closely in support of USAID/BHA, utilizing BHA guidance on effective use of DoD assets in foreign disaster relief, including disease-focused foreign humanitarian assistance.

USAID/BHA's core competency is foreign disaster relief and humanitarian assistance. They play a critical role in vetting requests for assistance to the DoD, to ensure effective use of DoD assets in a foreign disaster response. BHA saves the DoD time in a response and connects the DoD with the appropriate points of contact by navigating the wide array of humanitarian actors, which they are familiar with.

USAID has personnel deployed in many countries, working across multiple development sectors, including health. In a pandemic situation, USAID's contacts in the health sector may provide valuable information on the health situation, state of the health system, and medical considerations relevant for the population. USAID connects U.S. military personnel with local stakeholders to increase coordination and local input.

In HADR situations other than foreign disaster relief, USAID can still provide invaluable local information to ensure security cooperation. For example, coordinating with USAID on medical, dental, or engineering civic action projects can ensure the involvement of local stakeholders, including women's groups, to facilitate implementation that is locally appropriate, sustainable, and thus, supportive of U.S. goals in the longer term.

Humanitarian Principles

Best Practice: All disaster responders should understand and support the humanitarian principles.

The humanitarian principles are the foundation for how humanitarian actors approach operations and planning – and informs how they approach civil-military coordination.

The Humanitarian Principles:

Humanity: Aid is provided to save lives and alleviate suffering.

Impartiality: Aid is given regardless of nationality, race, religion, gender, class, or political opinion. Aid is based on need.

Neutrality: Aid is provided regardless of political allegiances.

Operational Independence: Humanitarian actors must retain the lead role in humanitarian activities. They must not implement tasks on behalf of a foreign government or military. They must be free in movement, conducting independent assessments, selecting staff and identifying recipients of assistance.

In response to disasters including pandemics, all assisting actors should endeavor to ensure their relief activities are provided in accordance with the principles of humanity, neutrality and impartiality. This means aiming to provide aid based on need alone, without discriminating among affected populations with regard to race, ethnicity, nationality, religion, class, gender, disability, age, or political opinion.

Logistics

Best Practice: Logistics is one of the military's unique capabilities that is well suited to large-scale disaster response. This may particularly apply during pandemics, where foreign personnel on the ground are limited.

Logistics has consistently been a unique military capability that can appropriately and relevantly support a large foreign disaster response. During pandemics, quarantine protocols may restrict international personnel from entering a country to respond to a disaster. However, remotely supplied logistical support will likely still be needed, including dispatching relief supplies. Given Force Health Protection constraints that may be enacted during pandemics, remote logistical support may also be a way for the DoD to support foreign humanitarian assistance.

For pandemics leading to localized disaster responses, such as TC Harold in Vanuatu in 2020, international support may be provided remotely. If foreign personnel are restricted, remote logistical support may focus on shipment of relief goods and facilitating other transport or technical support. The ability to work remotely and on unrestricted systems will be even more important than it already is.

Best Practice: Keep information unclassified and use unrestricted information systems as much as possible. The majority of humanitarian partners or affected state personnel that the DoD supports and coordinates with in HADR, including disease-focused response, use unclassified information and systems.

Using unclassified information systems in foreign humanitarian response, including in epidemics, has been a lesson “observed” repeatedly for the DoD – for *decades*:

- 2014 Ebola in Liberia – “the US military’s overreliance on classified computer networks to promulgate substantial, unclassified information complicated information sharing.”²¹
- 2013 Super Typhoon Haiyan in the Philippines – “Coordination and correspondence during an FHA [foreign humanitarian assistance] response should be unclassified as much as possible to maximize information-sharing. If we cannot communicate, we cannot coordinate. Operating in the Secret Internet Protocol Router Network resulted in wasted time and effort, delaying shared situational awareness with partners.”²²
- 2010 Earthquake in Haiti – “Develop an unclassified humanitarian assistance common operational picture with tools to share information with nonmilitary partners. (Interagency, NGOs, UN, etc.)”²³
- 2005 Earthquake in Pakistan – “Relevant military information should be unclassified, so that those without clearance can review it.”²⁴
- 2004 Indian Ocean Tsunami – “In the case of Operation Unified Response, the military hampered unity of effort by initially operating on the SIPRNET.”²⁵

Influence initial decisions on information systems toward using unrestricted systems, and keep the maximum amount of information unclassified. Help to finally make this a lesson learned and *applied*.

Best Practice: Consider Force Health Protection (FHP) issues not only in various pandemics, but how FHP constraints will affect an HADR mission in a pandemic environment.

For HADR missions that are in response to pandemics or epidemics, such as the DoD responding to the 2014 Ebola outbreak in Liberia, deployment to support pandemic response will entail challenges from medical logistics to adequately supplying and training with personal protective equipment.

Plan for a range of possible FHP concerns, depending on the disease outbreak situation, regulations imposed by partner nations, impact on logistics, options of direct or remote support, and implications for interagency or international coordination. Considerations can include:

- Procuring personal protective equipment (PPE) in the right amount, type, and sizes. Equipment size and design often defaults to “one-size-fits-men,”²⁶

potentially leaving women service members facing greater safety risks in ill-fitting PPE without modifications.²⁷

- Partners' social distancing regulations and international travel restrictions may affect how to execute the mission.
- Compare how DoD HPCON (Health Protection Condition) aligns with other US government agency measures (CDC-assessed transmission risk levels, State Department travel risk levels, etc.) for smoother USG interagency cooperation.
- Compare how DoD guidance aligns with that of partner nations or international organizations (e.g., World Health Organization, or WHO) as may affect international coordination.

Best Practices:

1. Military planning and contingency operations should account for more extreme scenarios involving disasters and infectious diseases.
2. Exercises should consider scenarios with Pandemic and Emerging Infectious Disease (PEID), and also combined with foreign disaster relief or foreign humanitarian assistance.

Military planning should factor in the likelihood of more frequent and severe disasters exacerbated by climate change, as well as more frequent or recurring epidemics and pandemics.

To prepare for this bilateral and multilateral exercises should incorporate not only pandemic and emerging infectious disease (PEID) scenarios, but also scenarios that combine foreign disaster relief or foreign humanitarian assistance in a PEID environment. Scenarios should account for a range of support, including remote logistics. We are already seeing places experience multiple disasters in quick succession (e.g., tropical cyclones hitting the Philippines in 2020) and multiple simultaneous disasters including disease outbreaks.

Some observations drawn from disasters and the COVID-19 pandemic in 2020 note the need to:

- Revise standard operating procedures for evacuation to accommodate social distancing.
- Re-purpose existing cyclone shelters, resources and tools for early warning.
- Protect responders.
- Reduce additional burden on hospitals.
- Protect the most vulnerable first, in line with disaster risk management principles.
- Support meteorological agencies that provide early warning information to ensure continuity should they become inoperative due to disease outbreak or other crises.²⁸

Best Practices: In coordination with USAID, consider how Security Cooperation activities can support initiatives on long-term cross-cutting issues, including pandemics, disaster risk reduction, climate change.

Foreign disaster relief is short-term, with the DoD only supporting about 10% of the foreign disasters that the U.S. government responds to, led by USAID. Furthermore, the DoD's main competency is not disaster management, pandemic response, climate change or other related, long-term issues; however, the DoD will be affected by them.

Security Cooperation is one part of the DoD that focuses on longer-term support to and cooperation with partner nations. Due to its farther outlook, security cooperation can potentially leverage its activities to support these cross-cutting issues. However, coordination with USAID is key. Many USAID programs and efforts relate to disaster risk reduction, strengthening health systems, climate change adaptation, etc. Furthermore, USAID's network of development contacts in countries should be coordinated with to enhance a more integrated USG whole-of-government approach.



USAID provided Vietnam with COVID-19 testing kits. Photo by USAID.

Case Study – Tropical Cyclone Harold, Vanuatu, April 2020

In response to Tropical Cyclone (TC) Harold, Vanuatu restricted incoming international humanitarian personnel with COVID-19 quarantine mandates, resulting in a unique disaster response that was predominantly localized.

Tropical Cyclone Harold struck Vanuatu, Fiji, Tonga and the Solomon Islands between 2-9 April 2020.²⁹ Vanuatu was particularly hard hit by the category 5 storm. TC Harold made landfall in Vanuatu on 6 April 2020, leading to three deaths,³⁰ and damaging or destroying 17,000 houses leaving around 87,000 people without shelter.³¹ Overall, more than 159,000 people were affected, particularly in the northern provinces.³² However, the burgeoning COVID-19 pandemic posed a new challenge with significant constraints. In response to COVID-19 infections beginning to spread globally, Vanuatu had recently declared a state of emergency on 26 March and restricted international and inter-island travel.³³ While the government eased social distancing measures enough to facilitate people seeking shelter in evacuation centers, it left in place restrictions on international personnel arriving to prevent COVID-19 transmission, which barred a typical international humanitarian response usually expected for a disaster of this scale.

In contrast, during the 2015 response to TC Pam, Vanuatu saw an influx of international personnel and resources, which brought significant contributions to the response but also complicated and overwhelmed the government's localized efforts. The memory of TC Pam, along with the concern that a COVID-19 outbreak would overwhelm the health system capacity, spurred the Vanuatu National Disaster Management Office (NDMO) to decide the response to TC Harold in 2020 would be managed locally. The NDMO declared, “no foreign personnel are being brought to Vanuatu for response efforts at the present time; this will be an internally run operation.”³⁴

There was considerable international concern about how restrictions on foreign personnel would hamper the response. While there were certainly aspects criticized and room for improvement, the overall response was seen as showing a predominantly localized response could be viable.³⁵ CARE Australia CEO Peter Walton stated, “Because of COVID, the international surge system couldn't fly in... And guess what? It was a good response.”³⁶

While the localized TC Harold response left a better impression than the 2015 TC Pam response, one significant criticism of the local response was that it included overly strict quarantine protocols for humanitarian cargo. Incoming cargo, including relief supplies arriving on French, New Zealand and Australian military planes, was mandated to be decontaminated at Port Vila Airport, far from the most affected areas, and then quarantined for 72 hours.³⁷ The strict cargo protocol seemed to err conservatively in the face of potentially conflicting

information at the time about how much risk surface transmission posed. By October 2020, a consensus had emerged among public health experts' messaging that the coronavirus was rarely transmitted through contact with tainted surfaces, thus extreme measures such as quarantining and wiping down low-contact objects were not warranted.³⁸ However, back in March-April 2020, WHO documents referenced the possibility of surface transmission more prominently.³⁹ Cargo restrictions along with inadequate logistical capacities led to delays releasing international relief supplies, resulting in isolated areas not receiving official aid for two months.⁴⁰ On the one hand, the local response included innovative adaptation techniques, including locally organized coconut frond weaving workshops to meet shelter needs with available resources.⁴¹ On the other hand, delayed supplies caused widespread frustration, led to people in mountainous areas walking six hours for food supplies, depleted people's savings to rebuild, and ultimately hampered recovery efforts.

With reduced international presence, local leaders comprised a significantly larger proportion of the Cluster Approach, which is the system used by humanitarian actors to coordinate response by functional sectors -- e.g., shelter cluster, health cluster, etc. -- and usually dominated by international actors. Clusters were chaired by government officials -- such as the shelter cluster being led by Vanuatu's national Public Works Department -- and more greatly participated in by local organizations and national staff. Local communities and traditional structures played an important role in supporting affected people in this response. The Malvatumauri (National Council of Chiefs) mobilized to raise funds and resources. Youth and mother's groups from unaffected areas donated crops and organized delivery logistics, with the locally sourced food rations being more diverse than standard relief food items seen in previous responses.

The idea of localizing humanitarian response has usually been addressed more in talk than action, but the COVID-19 pandemic compelled a localized response to disasters in the Pacific. While international participation was reduced in terms of arriving personnel, remote support was still important.

Foreign militaries have typically brought a unique capacity in logistics to international disaster responses and will likely continue to do so in future HADR missions, including in pandemics. Evaluations of the TC Harold response found that logistics among other technical sectors would have strengthened the response with in-country international surge support.⁴² Vanuatu's cargo limitation was criticized and is unlikely to be adopted in localized humanitarian responses in pandemics. Thus the military strength of providing logistics support will certainly be needed in future large-scale disasters. HADR in pandemic constraints will require increased forms of civil-military coordination. Within the USG interagency, the key point of coordination is with USAID/BHA as the US lead federal agency in foreign disaster relief. Other forms of civil-military coordination will range across disaster types and locations. Almost

every country utilizes their security forces domestically to respond internally to disasters of sufficient scale. In localized responses in influenza pandemics, national security forces may be the only military actors on the ground. Accordingly, maintaining international and bilateral relations among militaries or other security forces that respond domestically (e.g., police in Vanuatu, which lacks a military) will facilitate future support.

Vanuatu and other locally-led responses during COVID-19 experienced challenges to be worked on, including streamlining and strengthening internal systems to respond quickly, and smoothly integrating the remote support from the international community. Working in support of the affected state in the ways they prefer is key in foreign disaster relief and humanitarian assistance.

Case Study – DoD support to US response to Ebola in Liberia, 2014-2015

Operation United Assistance was the first US military operation to support a foreign humanitarian assistance mission focused on and directly in response to a disease epidemic. The US government, led by USAID, responded to the Ebola outbreak in 2014-2015. The outbreak in West Africa from 2014-2016 was the world's largest Ebola epidemic, centering around three countries. The initial case was reported in December 2013 in an 18-month-old boy from a village in Guinea, who was believed to have contracted it from bats. By July 2014, Ebola had spread to the capitals of Guinea, Liberia, and Sierra Leone, all neighboring countries. By 2016, there had been at least 11,325 deaths out of 28,652 total cases (both suspected and laboratory confirmed), with 13% of cases of Guinea, 37% in Liberia, and 49% in Sierra Leone. The remaining 1% of cases were in Nigeria, Mali, the U.S., Italy, Senegal, Spain, and the UK.⁴³ The NGO Médecins Sans Frontières (MSF) was key in raising the global alarm, despite enduring criticism from a slow-responding World Health Organization (WHO) and national governments fearful of economic repercussions. Reflecting the severity of the situation and of resource limitations, in October 2014 the staunchly independent MSF remarkably was among the organizations calling for the US and other world leaders to deploy military as well as civilian teams to respond to the Ebola crisis.⁴⁴

The predecessor to USAID/BHA, the Office of U.S. Foreign Disaster Assistance (OFDA), was the designated lead federal agency whose response to the outbreak included Disaster Assistance Response Teams (DART) to Liberia, Guinea, Sierra Leone, and Mali to direct the overall U.S. response. The U.S. whole-of-government response included significant interagency partners to USAID, including the DoD, U.S. Public Health Service, U.S. Centers for Disease Control and Prevention (CDC), and National Institutes of Health (NIH). The CDC deployed nearly 2,000 personnel to West Africa to assist with disease surveillance, contact tracing, data management, laboratory testing, and health education. More than 300 officers from the U.S. Public Health Service (USPHS)

Commissioned Corps provided treatment for infected healthcare workers in Liberia's capital at the Monrovia Medical Unit (MMU), built by U.S. Africa Command with support from other military commands. The Joint Chiefs of Staff issued multiple executive orders to provide the 25-bed MMU, Ebola Treatment Units (ETUs), six medical research labs, and almost 3,000 troops, establishing policy in line with best practices for foreign military assets in HADR that DoD support:

1. be limited to DOD-unique activities, and
2. not include direct patient care.

The ETUs were designed to accept any patient, with the U.S. supporting training to Liberian caregivers, though the ETUs became operational after patient demand had peaked. The MMU was planned as a first-rate treatment facility to caregivers who contracted Ebola to bolster Liberia's heavily impacted health care staff, with the US Public Health Service (USPHS) providing patient care at the MMU.⁴⁵

Joint Force Command-United Assistance (JFC-UA), led by Major General Williams and his USARAF team, commenced operations. JFC-UA led the U.S. military response, in support of USAID's DART, across four lines of effort: command and control for DoD forces, engineering support, logistics support, and medical training assistance. JFC-UA leveraged DOD-unique logistics capabilities, including USTRANSCOM's strategic sealift and airlift, material tracking, and cargo handling. "It took our aircraft two hours to deliver material that would have taken weeks to deliver by other means," according to the Aviation Brigade 2-501st Battalion Commander. JFC-UA also provided healthcare worker training on Ebola symptoms and use of PPE to healthcare workers staffing the ETUs. As Ebola had decimated Liberia's healthcare system and led to a shortage of healthcare workers, the USG interagency developed a training program to lower the risk of infection, which also helped attract needed healthcare workers. By early 2015, the Ebola outbreak no longer necessitated a large DoD presence. On 9 May, the WHO declared Liberia to be Ebola-free, and the JFC-UA concluded operations on 30 June 2015.

Challenges included:

- Incomplete assessment of the operating environment in West Africa, particularly the challenging, austere physical environment.
- Significant underestimation of capacity in Liberia, resulting in more forces than necessary
- Unfamiliarity with operating from new bases
- Overreliance on classified computer networks, even for unclassified (UNCLAS) information, which resulted in not being able to communicate with U.S. interagency partners who operated on the internet.⁴⁶ Per a responder from USARAF G-3, "Knowledge management (KM) was difficult for us because we initially used SIPRNET (SECRET Internet Protocol Router

Network) and worked with DOS (Department of State) and USAID who use NIPRNET (Nonsecure Internet Protocol Router Network). Most of the stuff for the operation was unclassified, so why do we use SIPRNET?”⁴⁷

Despite challenges, the USG response including DoD wrought positive effects. Per US Ambassador Deborah Malac, “The psychological impact [of the US military presence] was transformative to the Liberians...there were dead bodies in the street, in the ocean... People were beyond afraid; they were despairing. The change was palpable within 24 hours of the president’s announcement.”



As part of Operation United Assistance, Capt. Will Wardwell, left, a team leader for the 82nd Civil Affairs Unit from Fort Stewart, Ga., “shakes hands” with a resident in the village of Daywonkon, Liberia on 22 NOV 2014. U.S. Army photo by Capt. Eric Hudson, Joint Forces Command.

CFE-DM Resources

Disaster Management Reference Handbooks:

<https://www.cfe-dmha.org/Publications/Disaster-Management-Reference-Handbooks>

- A health section is included in each country-specific handbook. Recently a section on climate change has been added to newer books. These sections provide relevant context for how disaster risk reduction and management are interlinked with climate change and health considerations, including pandemics.

Case Studies:

<https://www.cfe-dmha.org/Publications/Case-Studies-Factsheets>

- Case Study 3: A review of Operation United Assistance: The U.S. Military's Response to the 2014 Ebola Outbreak in Liberia
- Case Study 7: Medical Diplomacy: U.S. Military Medicine in Humanitarian Assistance & Disaster Relief

Reports and Studies:

<https://www.cfe-dmha.org/Publications/Reports-Studies>

- Information Paper: Disease Outbreaks in the Pacific: The Samoa Measles Outbreak
- Information Paper: Information Paper on the Zika Virus (ZIKV) Outbreak in the Pacific

Endnotes

- 1 Cover image: Top photo by Pixabay user Geralt. <https://pixabay.com/illustrations/corona-coronavirus-virus-blood-5174671/>
- 2 Cover image: Bottom photo by NASA. <https://www.nasa.gov/content/hurricanes-iselle-and-julio-nearing-the-hawaiian-islands>
- 3 Coronavirus, Climate Change, and the Environment: A Conversation on COVID-19 with Dr. Aaron Bernstein, Director of Harvard Chan C-CHANGE. <https://www.hsph.harvard.edu/c-change/subtopics/coronavirus-and-climate-change/>
- 4 Analysis: Pandemic debt adds to challenge of funding world's climate goals. 18 November 2021. <https://www.reuters.com/business/cop/pandemic-debt-adds-challenge-funding-worlds-climate-goals-2021-11-18/>
- 5 <https://www.hsph.harvard.edu/c-change/subtopics/coronavirus-and-climate-change/>
- 6 The Global Rise Of Dengue Infections. 21 March 2019. <https://www.outbreakobservatory.org/outbreakthursday-1/3/21/2019/the-global-rise-of-dengue-infections>
- 7 <https://www.theglobalfund.org/en/malaria/>
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