

# Chapter 32

## Principles of Elective Navy Humanitarian Missions



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*What have you done for the good of mankind lately?*

*Dr. Norman McSwain*

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**BLUF (Bottom Line Up Front)**

1. Humanitarian missions will greatly vary depending on the host nation's capabilities, infrastructure, and surgical needs.
2. Quality surgical care is an essential component of humanitarian missions. The surgical capacity to provide care relies on available medical personnel, level of training, surgical equipment, anesthesia support, and ancillary services. Assessment of these resources must be performed prior to deployment.
3. United States (U.S.) military personnel should partner with host nation assets and humanitarian assistance organizations (HAOs) to understand the available resources and build relationships.
4. Significant amounts of planning and communication across and between organizations are essential to optimize the success of any size humanitarian mission, particularly large-scale ones.
5. The humanitarian mission should provide the most care to those in need while minimizing complications, taking postoperative care into consideration.
6. Post-deployment assessments must list best practices, lessons learned, and areas for improvement in preparation for future humanitarian missions.

**Introduction**

Throughout its history, the United States (U.S.) Navy has engaged in a variety of humanitarian operations. Since its first documented humanitarian action in 1851, the U.S. Navy has continued to carry out humanitarian missions to build upon international partnerships, promote global stability and security, and maintain the operational readiness of military medical personnel [1]. These humanitarian operations include responses to natural disasters and conflicts, rescues at sea, emergency medical assistance, and nation-building activities [2]. More recently, these missions have focused on supporting the establishment and further development of partner nation health systems to promote long-term regional stability and global security [3].

**Clinical Vignette 32.1**

*A U.S. military-sponsored humanitarian mission had a small medical team consisting of one surgeon, two emergency medicine physicians, an anesthesiologist, two nurses, four corpsmen, and limited resources. They were assigned to provide medical support to a local village in a low-income country with limited resources. A three-year-old child with a large empyema who was short of breath and in mild respiratory distress was evaluated.*

*What considerations must the team consider before treating this child? Should the surgeon or emergency medicine physicians provide care or defer medical treatment elsewhere?*

## Objectives of U.S. Navy Humanitarian and Civic Assistance (HCA) Missions

The U.S. Navy participates in Foreign Humanitarian Assistance (FHA) operations with the objectives of saving lives, alleviating human suffering, and minimizing the economic costs of conflict, disasters, and displacement [4]. FHA operations are conducted under the direction of the President of the U.S. or the Secretary of Defense and in coordination with local and international stakeholders [4]. Frequently conducted outside of the U.S. and its territories, these missions serve to assist host nation civil authorities or agencies in providing disaster relief, security operations, logistical support (e.g., transportation of supplies or personnel), and medical assistance, among other support activities [4]. These operations may also be conducted concurrently with other Department of Defense (DoD) support missions and activities that support strategic objectives (e.g., providing dislocated civilian support) and enhance theater security (e.g., fostering regional partnerships, providing foreign security assistance, and participating in stability activities) [4].

Encompassed within FHA operations are Humanitarian and Civic Assistance (HCA) and Foreign Disaster Relief (FDR) missions. HCA is provided to build partnerships in order to facilitate cooperation and enhanced interoperability with host and partner nations during times of crisis. These elective operations may utilize U.S. Navy hospital ships, large deck amphibious warfare ships, Maritime Expeditionary Security Forces (MESF), expeditionary medical facilities (EMFs), and forward-deployable preventive medicine units (FDPMUs). On the other hand, FDR operations are conducted in response to natural disasters or international conflict, and any U.S. Navy warship at or near the immediate scene of a foreign disaster can be tasked with participating in these operations as described in Chap. 33 [4].

Health and medical support are essential components of FHA operations. These services include:

- Coordinating actions to prevent or control disease outbreak
- Evacuation or temporary hospitalization of the sick, wounded, or injured followed by a coordinated return to civilian facilities of the host or partner nation
- Distribution of supplies and equipment
- Assistance in reestablishing host nation and donor health sector resources and institutions with primary consideration given to supporting and supplementing any existing medical infrastructure [4]

Surgical care is increasingly being viewed as an essential component of health-care delivery in military humanitarian missions because high-quality surgical care can facilitate the provision of other vital health services [5]. An estimated 1.4 million deaths could be prevented worldwide with access to essential and emergency surgical care within low- and middle-income countries (LMICs). However, access to surgical care in LMICs remains a challenge as many of these countries lack the necessary medical infrastructure and trained medical personnel [6]. Military humanitarian operations that incorporate surgical care can assist LMICs in building up

their local medical infrastructure while helping to alleviate their large surgical burden of disease. These missions can provide a long-lasting impact through the capacity building of the host nation's medical infrastructure and education and training to local medical personnel.

## **Small- and Medium-Scale HCA Missions**

At present, there are no defined size classifications of humanitarian operations. Therefore, the scale of a humanitarian operation depends on the mission's overall objective(s) and the availability of resources and ancillary staff for that mission. Most U.S. missions are in foreign countries, and the needs of the mission often dictate the required personnel and equipment. For example, small-scale missions might include a surgical team with a single surgeon, anesthesia provider, nurse, and corpsman participating in a rescue operation. Medium-scale operations might involve a few more providers in each role. **However, regardless of scale, understanding the host nation's capabilities and appropriately engaging with state and international agencies or organizations are essential to the success of all humanitarian operations.**

### *Understanding Host Nation Capabilities*

During these operations, medical providers are tasked with providing a level of care that meets current U.S. standards of care while at the same time considering the host nation's standards of care and ability to sustain the level of care provided [4]. Therefore, when participating in humanitarian aid and humanitarian operations, military medical providers must consider the expressed needs of the host nation in the context of available resources and local medical infrastructure. Mission planners should anticipate that the healthcare delivery infrastructure in host nations may be austere or nonexistent and should perform early surveying of the host nation in order to identify health and medical needs. This assessment will help coordinate efforts of the local, regional, and international stakeholders [4]. The involvement of host nation leadership and medical care personnel in these missions is pivotal to developing the host nation's medical infrastructure and health system capacity building.

### *Working with State and International Agencies or Organizations*

Various disasters, conflicts, and endemic diseases may affect the ability to provide humanitarian care. The U.S. Department of State (DOS) can provide information on the threat levels and conditions in certain prospective host nations. For this reason,

military planners will occasionally work closely with key individuals within the DOS, especially for large-scale humanitarian missions.

Humanitarian assistance organizations (HAOs) may already exist in various foreign countries. There are two types of HAOs: intergovernmental organizations (IGOs) and non-governmental organizations (NGOs). IGOs are entities created by sovereign states through multilateral treaties that act under an agreed treaty that sets up the agencies, organizations, and objectives [7]. Examples of IGOs are the United Nations High Commission on Refugees, the International Committee of the Red Cross, and the World Health Organization (WHO). NGOs, on the other hand, are independent, nonprofit organizations that are predominantly managed by local or international civilian personnel. NGOs provide the majority (>90%) of aid coordinated by the United Nations (UN) [8].

Categories of NGOs are:

- Humanitarian aid
- Advocacy
- Faith-based groups that do not use religion as part of the provided aid
- Missionary groups that seek to spread their religion using humanitarian access to communities

As independent organizations, NGOs usually have no political affiliation. However, because these organizations rely heavily on funding, donor interests or priorities often influence their operations. Therefore, NGO goals may conflict with those of military operations. Strengths of NGOs include their flexibility in being able to perform multiple duties within host nations, their ability to maintain long-term continuity and establish relationships with vulnerable areas, and their capacity to have a specialized response focus, benefit from local resources, and solicit funds to meet needs. Potential weaknesses of NGOs include limited logistical capacity and consequential reliance on military, government, or UN agencies to support large-scale tasks.

Working with host nation assets (medical leadership, host nation ministry, IGOs, or NGOs) may support humanitarian missions and build relationships. However, clear and transparent goals from each participating organization must be established to avoid conflicts in providing care.

## Large-Scale HCA Missions

Since 2006, the U.S. Navy hospital ships, the USNS Mercy (T-AH-19) and USNS Comfort (T-AH-20), have regularly deployed in support of large-scale HCA missions. The USNS Mercy (T-AH-19) has deployed periodically to Southeast Asia and Oceania in support of operation “Pacific Partnership,” and the USNS Comfort (T-AH-20) has deployed to the Caribbean, Central America, and South America as a part of “Partnership for the Americas,” “Operation Continuing Promise,” and “Operation Enduring Promise” (Table 32.1). These missions involve coordination

**Table 32.1** USNS Mercy (T-AH-19) and USNS Comfort (T-AH-20) large-scale humanitarian and civic assistance (HCA) missions by year

Year	Large-scale humanitarian and civic assistance mission	
	USNS Mercy (T-AH-19)	USNS Comfort (T-AH-20)
2006	Pacific Partnership	
2007		Partnership for the Americas
2008	Pacific Partnership	
2009		Operation Continuing Promise
2010	Pacific Partnership	
2011		Operation Continuing Promise
2012	Pacific Partnership	
2015	Pacific Partnership	Operation Continuing Promise
2018	Pacific Partnership	Operation Enduring Promise

and cooperation between the US military, host and partner nations, and national and international organizations and agencies [4, 5]. Various medical and non-medical personnel from all US military branches, partner nations, and NGOs contribute to the workforce for these missions. These missions typically last between 4 and 5 months and involve 4–12 host nations with an average performance of 51 to 251 operative cases per month.

### *Medical Capabilities of U.S. Navy Hospital Ships*

One unique aspect of the U.S. Navy Fleet is the availability of two dedicated hospital ships, the USNS Mercy (T-AH-19) stationed on the West Coast with homeport in San Diego, CA, and the USNS Comfort (T-AH-20) stationed on the East Coast with homeport in Norfolk, VA [9, 10]. These ships are fully functional, independent, mobile hospitals with their own recurring humanitarian aid mission cycle [5]. Each vessel has 12 operating rooms (ORs), approximately 1000 hospital beds, and 50 casualty-receiving beds [4]. The hospital beds onboard include 20 post-anesthesia care, 80 intensive care, 400 intermediate care, and 500 basic care beds. The capabilities aboard these hospital ships include digital radiological services, a computed tomography (CT) scanner, invasive angiography, a diagnostic and clinical laboratory, a blood bank, a pharmacy, an optometry lab, and two oxygen-producing plants [4]. Both ships also have a helicopter landing deck and side ports to take on patients at sea. Due to their designation as hospital ships and in agreement with the Geneva Convention, they do not possess any offensive weapons, but defensive weapons are available.

The primary mission of U.S. Navy hospital ships is to provide afloat medical capability for acute medical and Level I trauma surgical care for forward deployed operational forces of the military services. The last time that U.S. Navy hospital ships were deployed for this purpose was in 2003 to support Operation Iraqi

Freedom [11]. A secondary mission of these ships is to provide a full-service hospital asset in support of disaster relief, humanitarian aid, and defense support to civil authorities worldwide [5]. For nearly 20 years, U.S. Navy hospital ships have been predominantly utilized to carry out this secondary mission. More recently, these hospital ships have provided limited medical support during the coronavirus disease 2019 (COVID-19) pandemic (see Chap. 33) [12, 13].

### ***The Humanitarian Assistance Survey Team (HAST)***

At the request of the United States Agency for International Development (USAID), a Humanitarian Assistance Survey Team (HAST) is organized and deployed to acquire information required for mission planning. The HAST is comprised of medical personnel qualified to conduct health, medical, and environmental vulnerability assessments; engineers along with logisticians, communications experts, transportation management specialists, and force protection experts [4]. This team works with local groups and USAID to assess the ability of the host nation's government to respond to disaster, identify points of contact for coordination and collaboration, determine potential environmental threats, survey local facilities and infrastructure, conduct health and medical assessments, and coordinate specific logistical support to assist with the relief effort [4].

### ***The Advanced Echelon or Advanced Liaison (ADVON) Teams***

Advanced Echelon or Advanced Liaison (ADVON) teams also play an essential role in planning U.S. Navy humanitarian missions. ADVON teams consisting of physicians, nurses, and other military personnel deploy several weeks ahead of the humanitarian missions to make preparations. The ADVON team will determine where the missions will take place as well as determine the logistics and organization of the mission. In the weeks before the mission, members of the ADVON team meet with NGOs; host nation directors to include Ministries of Health, Ministers of Education, and Ministers of Internal Affairs; and local healthcare providers, teachers, town officials, and media sources to prioritize healthcare services and determine the best way to organize the medical and surgical mission [14].

### ***Providing Surgical Care***

Following the arrival of a U.S. Navy hospital ship deployed on a humanitarian mission, a surgical screening team – consisting of surgery, anesthesiology, cardiology, and radiology providers – evaluates patients onshore and then schedules them for

surgery aboard the ship [15]. Host nations may provide a list of surgical candidates to U.S. military medical providers prior to arrival. However, individuals are required to present for preoperative screening in order to be offered surgery. Patients are offered surgery if they met the criteria for same-day surgery or if they will have an anticipated recovery and discharge before ship departure [15]. If the ship is anchored offshore, patients are transported to and from the ship by watercraft or aircraft [15].

### ***Other Aspects of Large-Scale HCA Missions***

Large-scale HCA operations are multifaceted missions. While military medical personnel are providing medical and surgical care and participating in shared education and training, other military personnel are engaging in other activities to foster relations and promote the health and security of host nations. These other operations include providing optometry services, providing veterinary care, building local infrastructure (i.e., Seabees), and engaging in public relations activities.

### **Challenges of HCA Missions**

The key to success in military humanitarian deployments is understanding the mission's objectives, understanding the limitations of resources, evaluating the host nation's needs, and participating in cooperative engagement to achieve the goals of the mission. It is crucial to partner with host nations to develop humanitarian aid initiatives, and medical providers must also consider the potential influence of local cultural practices and beliefs. Described challenges of U.S. Navy humanitarian missions include differing objectives and modes of operation, competing missions, inadequate structure and procedures, incompatible communications, overly restrictive security classifications, cultural and religious differences, and bureaucratic and personnel limitations [4]. Host nation priorities can influence mission productivity, and it is essential to participate in cooperative engagement to achieve the goals of the mission. Additional challenges include the relationship between the host nation and the U.S., the staffing and effectiveness of the U.S. embassy, host nation advertising prompting presentation of potential surgical candidates for treatment, in-country U.S. military groups, ministries of health, the availability and cost of supplies and equipment, the effectiveness of communication between mission medical providers onshore and ship-based surgeons, and the distance between the ship at anchor to the various clinics [16].



## Deployment Considerations

### *Capabilities of the Surgical Team*

During U.S. Navy HCA missions, U.S. military personnel work together with host nations, partner nations, and NGOs to provide medical, surgical, dental, and veterinary care and resources to host nations [5]. The role of the surgeon and surgical team during these missions is to provide low-risk, high-yield surgical care to individuals living in LMICs while supporting and supplementing existing local medical infrastructure through sharing knowledge and training alongside surgeons from host and partner nations.

The host nation needs will dictate the number of procedures performed on these missions. Additionally, U.S. Navy humanitarian missions are short-term missions (4–5 months), with port visits typically lasting between 4 and 16 days in duration. These time constraints limit the ability of surgeons to perform complex operations or procedures after which patients may require longitudinal follow-up and care. For that reason, the focus of the surgical mission is on the performance of elective operations. Many of the host nations visited by the US Navy hospital ships on these missions lack the healthcare infrastructure and other resources necessary to accommodate long-term postoperative care. If follow-up care is required beyond 2 weeks, efforts are made to establish this care with NGOs or host nation hospitals. However, this varies by country and is dependent on local medical infrastructure.

### *Screening Criteria for Surgery*

Patient selection is a critical task for surgical providers and is especially important while participating in large-scale, foreign HCA missions. Both the capabilities of the hospital ship and a surgical candidate's risk tolerance for elective procedures must be carefully considered [17]. The specialized training of the deployed anesthesia providers and surgical providers will also influence what types of operations can be performed on these missions. Additionally, surgeons must consider the short-term nature of these missions and the ability to coordinate continued care within the medical infrastructure of the host nation when deciding which surgical procedures to offer to those presenting for operative treatment of surgical diseases in host nations. Screening criteria have previously been developed for large-scale HCA missions. Anesthesiologists developed screening criteria on Pacific Partnership 2008 to identify patients who “met criteria for cancellation of cases,” and these criteria were later adapted for use during Pacific Partnership 2010 (Table 32.2).

**Table 32.2** An example of anesthesia screening criteria for surgery on a large-scale foreign Humanitarian and Civic Assistance (HCA) mission (Source: Reprinted with permission from *Military Medicine*)

System	Criteria for cancellation of cases
Cardiovascular	<ul style="list-style-type: none"> <li>• HTN: SBP &gt;160 or DBP &gt;90 or PP &gt;80 mm Hg</li> <li>• CAD: myocardial infarction within last 6 months or remote myocardial infarction not revascularized</li> <li>• CHF: evidence of active uncompensated CHF</li> <li>• Arrhythmia: frequent symptomatic palpitations</li> <li>• Tachycardia: resting HR &gt;100 or HR 100–110 (refer to cardiology)</li> <li>• Valvular disease: type III/VI or greater SEM, diastolic murmurs, AS, MR (refer to cardiology)</li> </ul>
Respiratory	<ul style="list-style-type: none"> <li>• Asthma: active wheezing or decreased breath sounds</li> <li>• COPD: symptomatic shortness of breath</li> <li>• OSA: snoring, daytime somnolence, witnessed apneic events</li> <li>• Airway: recognized difficult airways</li> </ul>
Endocrine	<ul style="list-style-type: none"> <li>• DM: fasting blood glucose &gt;300; evidence of end-organ damage</li> <li>• Thyroid: all goiters (refer to cardiothoracic surgery, must have no evidence of thyrotoxicosis)</li> <li>• Obesity: BMI &gt;35</li> </ul>
Neurological	<ul style="list-style-type: none"> <li>• Cerebrovascular: any residual deficit or frequent transient ischemic attacks</li> <li>• Gait disturbances</li> <li>• Seizure: new onset or history of epilepsy</li> </ul>
Obstetrics and gynecology	<ul style="list-style-type: none"> <li>• Pregnant</li> <li>• Breast, ovarian, or cervical cancer</li> <li>• Postpartum &lt;2 months</li> <li>• Counsel if breastfeeding</li> </ul>
Oncology	<ul style="list-style-type: none"> <li>• Any current cancer (unless operative site)</li> </ul>
Pediatric	<ul style="list-style-type: none"> <li>• Age &lt;6 months; advanced cases &lt;2 years</li> <li>• Syndromic appearance</li> <li>• CHD: known lesions/cyanotic history, refer all murmurs to cardiology for evaluation</li> <li>• URI: symptoms within 4 weeks</li> </ul>

*HTN* hypertension, *SBP* systolic blood pressure, *DBP* diastolic blood pressure, *PP* pulse pressure, *CAD* coronary artery disease, *CHF* congestive heart failure, *HR* heart rate, *SEM* systolic ejection murmur, *AS* aortic stenosis, *MR* mitral regurgitation, *COPD* chronic obstructive pulmonary disease, *OSA* obstructive sleep apnea, *DM* diabetes mellitus, *BMI* body mass index, *CHD* congenital heart disease, *URI* upper respiratory infection

### ***Surgical and Medical Civil Action Programs (SURGCAPS and MEDCAPS)***

Prospective surgical candidates are evaluated on the arrival of the U.S. hospital ship in shore-based facilities by members of surgical and medical civil action programs (SURGCAP and MEDCAP) [17]. The SURGCAP team consists of 50 to 70 personnel, including surgeons, nurses, surgical technologists, anesthesia providers, inter-nists, cardiologists (with transthoracic echocardiogram capability), translators, lab

support, schedulers, hospital administrators, and information technology support [17]. Prospective surgical candidates would then be further evaluated by surgeons and anesthesia providers onboard the U.S. hospital ship. Those deemed as poor surgical candidates by anesthesia but as an acceptable surgical risk by a surgeon would be referred to a Surgical Risk Evaluation Committee.

### ***Subject Matter Expert Exchanges (SMEE)***

U.S. Navy humanitarian missions provide a unique setting for the training of medical providers and healthcare personnel within the U.S. military, host nations, and partner nations. During the most recent humanitarian operations—“Pacific Partnership,” “Operation Continuing Promise,” and “Operation Enduring Promise”—U.S. military healthcare personnel participated in Subject Matter Expert Exchanges (SMEE) with medical providers from host and partner nations. In addition, U.S. Navy surgeons operated alongside surgeons from host and partner nations, which provided an opportunity for surgeons to share knowledge, practices, and skills. This sharing of knowledge supports readiness for U.S. Navy medical personnel and promotes collaboration and partnership between the U.S. and host and partner nations.

## **Post-deployment**

### ***Lessons Learned***

Due to the lack of continuity of providers participating in U.S. Navy Humanitarian missions, it is imperative that lessons learned by military teams on these missions be passed on to those who will be participating in these missions in the future. Some past examples include:

- Be flexible. It is not uncommon to experience frequent changes in mission plans at the request of mission leadership, host nation leadership, and mission personnel [18].
- Documentation is extremely important. There is a need for an automated patient tracking system to collect demographic data and clinical information to improve the coordination of longitudinal care and future mission planning.
- Define gaps in care and resources after each mission to decide if future missions should consider additional personnel or equipment to address such deficiencies.
- Local, regional, and country assessments should be evaluated at each mission to determine capabilities and plan for sustainable programs to improve host nation prevention programs, education, and infrastructure.

## ***After Action Reports***

Current documentation and dissemination of lessons learned from U.S. Navy humanitarian missions are “highly variable, often lacks transparency, and is not easily accessible” [18]. A variety of resources exist; however, they are not easily accessible nor centralized in one location (e.g., All Partners Access Network, Joint Lessons Learned Information System [JLLIS], Global Health Engagement (GHE) website resource, Global Health eLearning Center, Center for Strategic and International Studies, Military Health System (MHS), and Defense Health Agency (DHA)) [18]. Networking and in-person communications within the GHE community have historically been the best ways to transfer experiential knowledge related to U.S. Navy humanitarian missions [18]. Such exchanges have been made possible through the Asia Pacific Military Health Exchange, GHE Summit, Pacific Partnership Interim and Main Planning Conferences, and MHS Research Symposium [18]. This passing down of knowledge is particularly imperative as military healthcare providers with hospital-based shipboard global health experience will often be selected to plan future missions [18].

### **Clinical Vignette 32.1 Conclusion**

*Prior to the humanitarian mission, established guidelines were determined that thoracic operations were beyond the capabilities of the surgical team. However, the team decided to examine the child with the expectation expressed to the host nation physicians that they could not provide emergent thoracic operations. On examination, the child was tachypneic and tachycardic with normal oxygen saturations on room air. Intravenous fluids and antibiotics were administered. A discussion with the host nation physicians and NGOs was performed to arrange for further inpatient care, and the military provided medical transportation to the pediatric ward at a nearby city hospital with full capabilities. An assessment was performed that documented contingent plans in managing pediatric patients in the future at this host nation.*

## **Conclusions**

There are many challenges to a successful HCA. Understanding mission goals and host nation expectations is a fundamental requirement before deployment. Medical planners should send teams ahead of time, establish guidelines, and conduct clear, transparent discussions with host nation medical leaders, local governments, partner nations, and NGOs before providing medical care. Surgical team members must not only know their inherent surgical limitations, but they must also consider host nation infrastructure, support from local assets (e.g., IGOs, NGOs, and local healthcare providers), and cultural and religious beliefs that may affect their abilities in providing such care. Post-deployment assessments are mandatory to improve future missions in resource-limited countries.

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### ***Further Reading***

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