Humanitarian Surgical Missions: Planning for Success

Mark Boston, MD¹, and Drew Horlbeck, MD²

Abstract

Humanitarian surgical missions can provide much needed care for those who are otherwise unable to receive such care because of limited local health care resources and cost. These missions also offer excellent training opportunities and can be life-changing experiences for those who participate in them. A successful humanitarian surgical mission requires careful planning and coordination and can be challenging for those tasked with the responsibilities to organize and lead these missions. This article addresses many of the issues and challenges encountered when planning and leading humanitarian surgical missions and offers a template to be used by those who take on these challenges.

Keywords

humanitarian, mission, surgical, planning, international, global health

Preliminary Mission Planning

Humanitarian surgical mission planning begins with identifying a need and establishing local contacts. Identifying suitable locations and making local medical contacts are often facilitated through charitable organizations, nongovernmental organizations, medical societies, or colleagues. During the preliminary planning phase, it is important to address several questions to avoid some of the common ethical errors of humanitarian surgical missions.1-3

Specific questions to answer at this planning stage include the following.

What Are My Motivations for This Mission? Are Political, Commercial, or Other Pressures at Play?

Humanitarian missions offer tremendous opportunities for professional and personal growth for participants and, at the same time, provide invaluable medical and surgical care for the patients they serve. One cannot help but be changed to some degree by participating in a humanitarian medical mission, and examining our personal motivations is a critical first step in the mission-planning process. Chances are we experience multiple motivations for participating in humanitarian missions: altruism, curiosity, training, expanding cultural awareness, and so forth. Still, political, commercial, or other than purely altruistic motives may be present. Only by fully examining the totality of motivations can we hope to provide the best care possible to those we seek to serve.

Is There a Real Need for the Services That We Can Offer?

There is a significant need for surgical care in developing countries, and properly performed surgical care can save lives and improve the quality of life for those who receive

¹Department of Otolaryngology, San Antonio Military Medical Center, San Antonio, Texas, USA
²Division of Otolaryngology Nemours Children’s Clinic, Jacksonville, Florida, USA

The views expressed in this article are those of the authors and do not necessarily reflect the official policy or position of the United States Air Force, the Department of Defense, or the United States Government.

Corresponding Author:
Col. Mark Boston, MD, Department of Otolaryngology, San Antonio Military Medical Center, 3551 Roger Brooke Drive, Fort Sam Houston, TX 78234, USA.
Email: airforceent@sbcglobal.net
it. However, surgical mission teams must avoid providing care merely because they can. To avoid the traps of incomplete, inadequate, or inappropriate humanitarian surgical care, surgeons must develop a clear picture of the requirements and the opportunities within a developing nation, as well as formalize the use of outcomes measurement tools for the mission. All humanitarian surgical missions should start with a needs assessment followed by a list of mission objectives that are agreed to by all parties. Finally, there should be a method that provides for the reporting of both short- and long-term surgical outcomes, as well as an evaluation of whether or not the mission objectives were met. While anecdotal reports of bright smiling children and heartwarming experiences have their place, they cannot substitute for facts and critical analysis.

Who Will Care for the Patients after the Team Has Left? What Are the Local Resources for Health Care?
The greatest concern of the humanitarian mission surgeon should be “who is going to care for these patients after I return home?” The availability of follow-up care and local resources must be established during the premission planning phase and confirmed prior to proceeding with each operation during the mission. Procedures requiring follow-up care beyond the resources and capabilities of the local medical system should not be performed.

Can I Ensure the Safety and Well-Being of the Patients and My Team? What Safety Protocols Need to be Established?
Patient well-being can be affirmed through the implementation of rigorous consent processes that balance local and cultural factors with Western standards, ethical considerations, and the adoption of safety protocols to ensure proper patient selection and postoperative care.

The humanitarian mission leader must also be concerned with the safety and well-being of his or her team, many of whom may have no prior experience in humanitarian mission work or international travel. An entire section of premission planning in this article is devoted to team personnel.

How Will I Assess the Mission Outcomes?
Once you have answered (or at least considered) the above questions, determined that you are capable of providing for the local surgical need(s), and have reliable and engaged local medical contacts, you should proceed with developing mission-specific objectives. Only by using predetermined objectives can we hope to truly measure the impact of humanitarian surgical missions.

Mission objectives are important for assessing the patient and local health impact but also for assessing the impact on the participants and, in particular, the value of humanitarian surgical missions in training residents. Mission objectives should be considered from the perspective of the mission team, the patient, and the local health care community.

Postmission questionnaires are valuable tools for determining the impact of a particular mission from the perspective of the team members. A recent survey of trainees in Uganda found that trainees in the developing world may not view humanitarian missions as positively as do the visiting teams, with perceived gaps in medical ethics, collaborative research, and training on donated equipment as major differences in opinion. Given these findings, the authors recommended that the development of mission assessment questionnaires should include questions for both visiting and host nation participants and address the issues of training, collaboration, and ethics.

Specific Mission Planning and the Site Survey
Broadly speaking, specific mission planning may be divided into 2 major areas: personnel and patients and procedures.

Personnel

Passports and visas. Passports are required for international travel. Not all countries require visas but may still charge entrance/exit fees. Check the US State Department website (travel.state.gov) for current foreign country visa requirements and other information.

Health and immunizations. The CDC Yellow Book (wwwnc.cdc.gov/travel/page/yellowbook-home-2014) contains up-to-date information on immunization requirements, malaria prophylaxis recommendations, and so forth. The CDC website also contains information regarding what to do if you are injured or become seriously ill while abroad. In addition, there are commercial agencies that provide international aeromedical evacuation for injured or ill travelers.

Medications. A team medical bag with routine medications including antibiotics, analgesics, and antidiarrhea medications is essential. Surgical teams should also consider bringing an HIV exposure kit with appropriate medications.

Credentials. Credentials are usually coordinated through the Ministry of Health and the local hospital. Many countries outside the United States request copies of medical school and residency diplomas and medical licenses. Malpractice coverage issues should be covered in a memorandum of agreement between your group/organization and the local Ministry of Health and/or local hospital where you will be working.

Transportation. Your team will need transportation to and from the airport as well as between the hospital and your accommodations. Using local drivers is recommended as driving in foreign countries can be challenging and dangerous. You may also need transport for daily errands, depending on the location of your accommodations, meal sources, and the hospital.

Airport. Having a local liaison to assist with entry/customs is helpful, especially if you are bringing in controlled substances and/or expensive equipment and supplies.
Customs. Foreign customs clearance is a necessary but often a slow step, particularly if expensive equipment and supplies are being shipped into country. It is necessary to coordinate well in advance of the mission to ensure availability of your equipment and supplies when the team arrives in country.

Accommodations. The priorities for lodging include security and proximity to the hospital. The proximity of your accommodations to restaurants and other community services should also be considered. In addition, consider meal availability at the hotel (breakfast may need to be available earlier than normal; are meals inclusive in the price of hotel?).

Meals. Breakfast is usually quite early for surgical teams, but consider local customs regarding lunch. Working through lunch may be acceptable in the United States but is not typical in Latin America or other regions. The team lead must also consider food sources and procurement from a team health and safety perspective. Food is a big part of experiencing another culture; however, there is a need to balance cultural sensitivities and personal health when offered local food.

Communications. Depending on your location, you may be able to use international-capable cell phones or purchase/rent local cell phones. The use of 2-way radios for in-hospital team communications is helpful, especially in regions with minimal or no cellular service.

Security. Provide a premission brief for all team members on personal security issues: local threats, traveling in groups of 3 or more (2 minimum), local language skills of team members, blending in as much as possible, your emergency exit plan, emergency contacts, local medical care for team members, and the international evacuation system.

Patients and Procedures

Patient screening. Who will prescreen and for what surgical conditions? Who is your local contact/liaison? Without a local surgeon, the mission will likely fail and patient care will be compromised. Consider only what cases you can do during the mission without the need for additional surgery or extensive follow-up. You will see and be asked to do things that you know are beyond the scope of your mission or your skills, and saying “no,” although difficult, is much easier than dealing with a major complication or poor patient outcome.

For small surgical mission teams, it is preferable if the host nation performs prescreening and selects out only those patients for whom surgery is likely to help. Our experience has shown this method to be most effective in that the mission team can evaluate a prescreened patient population of 75 to 100 patients in 1 day to identify the 40 to 50 most eligible surgical patients for a 2-week mission trip. On surgical missions without a prescreened patient pool, we found a low surgical rate of approximately 1:10 and filling out the operative schedule required several days of patient screening, further limiting the amount of surgery performed.

Population health. Consider the overall local health care system and how the patients access it. Who is the major payer for health care in the country? How far must patients travel to access care? Who would provide surgery for these patients if you were not going to do a mission? What are the major impediments to receiving surgical care currently? These questions are intended to help you better appreciate the problems and issues faced by the population in the host country and to understand the national health care system in order to provide you with some perspective on your role and place in the international health care community.

Hospital administration and consent. Obtain local hospital forms, order sheets, admission paperwork, and discharge paperwork/instructions if available for review. Discuss consent issues with regard to local policy and your team requirements. Determine who will write and sign orders.

Postoperative care. Do nurses staff the postoperative recovery area, or do you need to provide nursing care? What about monitors? You cannot use operating room (OR) monitors in recovery if you still need to do more surgery, so consider additional pulse oximetry monitors at a minimum. Most patients are poor and often travel great distances for care, so how will you accommodate them? Who will provide care after the team has left? What supplies do they need for postoperative care? How will you handle complications? Who will be available in the hospital at night or be able to respond to postoperative emergencies and nursing questions?

Medication. Know what is available locally and bring what is needed for the patients but not locally available. Postoperative medications should be provided to patients with written and verbal instructions in their native language (consider illiteracy rates in the local population). Purchasing medications in bulk and providing patients with small plastic bags of medications or small bottles is an efficient practice. Bring premade medication labels (in native language) for common or frequently prescribed medications. Minimize the use of oral narcotics as much as possible. Coordinate anesthesia medications with the anesthesiologist and with local medical personnel. Try to purchase fluids (saline, etc) locally as they are heavy and costly to ship. You may be able to purchase many medications locally, but you should bring the “must have” medications with you—narcotics, anesthetics, paralytics—anything that is a “show stopper” if you don’t have it. Emergency resuscitation medications should also be brought with the team if these are not available locally.

Surgical gases. Some countries and hospitals can provide only room air for ventilation. At a minimum, an oxygen source is needed for surgical patients in both the OR and recovery. Gases may either be piped into the hospital or provided in tanks (D-cylinder), and connectors may or may not be compatible with equipment brought from the United States.

Clinic space. A minimum of 2 rooms—one for preoperative surgeon evaluation and a second for anesthesia and paper
work (hospital specific forms, consent, etc)—is a reasonable design for patient screening at the start of a surgical mission. Screening may be performed on the first day of the mission only or throughout the duration of the mission; however, we have found that it is difficult to continue the screening process when most of the team is engaged in surgery. We typically have a small clinic room available for the duration of the mission for postoperative visits and other consultations.

Host nation personnel. Are nurses and technicians available to assist in preoperative evaluations? Are translators available? Are security personnel available for mass-screening days? Who will be able to provide food and water to patients and families on a mass-screening day? Who will tell patients that they will not have surgery? This last question is critical because, in our experience, it is very difficult for mission team members to refuse care to someone who has no other options. It is extremely helpful to have host nation medical personnel participate in these emotionally draining conversations.

Preoperative evaluations. Are consultants available in cardiology, pulmonology, internal medicine, and pediatrics? Are laboratory support and radiology studies available? Consideration must be given to who will pay for the lab tests and radiology studies. Many hospitals in which we have worked have requirements for preoperative tests that we would not routinely order in the United States. In addition, patients may have to travel to private hospitals for more expensive tests such as computed tomography scans if these are required and available.

ORs. One or 2 dedicated rooms, depending on the size of the team and number of patients, should be available. When planning the overall length of the surgical days, you must consider local hospital personnel and their usual workday. Will they be paid for additional work hours, or are they volunteering additional hours to help with the mission?

Equipment. What is locally available in both the clinic space and the OR? What do I need to bring to screen patients? Does the OR have a table? Lights? Chairs? Anesthesia machine and monitors?

Storage. A secure, locked room or closet for your equipment and supplies that is convenient to the OR and clinic areas is important to ensure the continued availability of these items.

Sterilization. If possible, check the local sterilizers to ensure they function; bring test paper and ask the hospital personnel to run the sterilizers for you. Make sure you can use the local sterilization equipment during the mission. Will you have access to the equipment or is it heavily used during the day? How would you sterilize instruments if the equipment fails or is unavailable? What are the local sterilization practices? Consider the potential surgical case delays imposed by a slow instrument sterilization process. Someone from your team will need to clean, count, and wrap the instruments for sterilization. Consider using Cidex or similar if steam sterilization is limited or unavailable.

Capacity-building opportunities. Capacity building is often overlooked yet critical component of humanitarian surgical missions. Capacity building requires the development of partnerships and a long-term commitment of resources and time. For US surgeons, these partnerships should, and often do, involve a mutually beneficial, collegial relationship with a surgeon in a developing nation. We must, of course, listen to our host nation physician colleagues and strive to meet their needs, but we must also keep in mind that, because of a lack of public health programs and limited access to care, physicians in the developing world may not always know what is needed most or what new tools or techniques offer the best chance of helping the most patients in their countries. Lectures and observation/participation in the OR are excellent learning opportunities for everyone. Consider leaving supplies and equipment (that can be maintained) if possible.

Site Survey

Perhaps the single most important part of premission planning is the site survey. The site survey is your opportunity to personally assess the hospital/clinic, local area, and accommodations and meet face-to-face with government health officials and local health care personnel and physicians. You may need more than 1 premission site survey depending on the mission, local requirements, and your overall familiarity with the country, hospital, and so forth. During the site survey, it may be helpful to develop and agree to a Memorandum of Agreement (MOA; Appendix S1, a sample Memorandum of Agreement (MOA) for humanitarian surgical missions, see www.otojournal.org/supplemental). An MOA is merely a written agreement or contract that spells out the details of the mission and the responsibilities of all involved. While not necessary for a humanitarian mission, the MOA does help to clarify roles and responsibilities and serves as a source document for reference during the planning and execution phases of the mission.

Site surveys need not be lengthy, and most can be completed in 1 or 2 days depending on the availability of host nation personnel and travel limitations. We have found it helpful to take photographs of the hospital facilities, equipment, medical gas connection, electrical outlets, and sterilization equipment, and this practice has been suggested by others. At a minimum, you should spend time at the hospital discussing the mission with both clinical and administrative health officials and local health care personnel and physicians. It is helpful during these discussions to consider how a patient will move through the hospital from preoperative screening to the OR to follow-up. If possible, discuss the mission and your requirements and capabilities with representatives from surgery, anesthesiology, nursing, central processing, sterilization, administration, and security. A checklist for use during the site survey is provided in Appendix S2 (available at www.otojournal.org/supplemental), and we also recommend reviewing the facility checklist in reference 2.
The site survey is also an opportunity to review local accommodations and meal options for the team. In addition, the site survey is a good time to visit venues for experiencing local culture, recreational and sightseeing opportunities, and social gatherings for the team and host nation personnel.

**Develop Mission Objectives**

Mission success depends on the attainment of mission objectives that must be established prior to the mission. Writing mission objectives is similar to writing objectives for continuing medical education in that they should be clear, concise, and measurable. For missions that include resident participation, it is important to develop objectives based on Accreditation Council for Graduate Medical Education (ACGME) core competencies (Appendix S3, sample graduate medical objectives for humanitarian surgical missions, available at www.otojournal.org/supplemental). In fact, humanitarian missions offer unique opportunities for resident education within the ACGME core competencies, especially communication, professionalism, and systems-based practice.9,10

Mission objectives should be written such that the team has reasonable control over the outcome. For example, an objective to see 100 patients with a particular disease is not within the control of the mission team and would not be an appropriate objective. Surgical mission teams may also wish to include patient outcome objectives such as measures of function, form, or quality-of-life improvements following surgical procedures. In addition, the host nation facility, in concert with the surgical mission team, should develop objectives that measure improvements in local medical and/or surgical capabilities following the mission. A list of sample objectives for a humanitarian surgical mission and individual participants is provided in Appendix S4 (available at www.otojournal.org/supplemental).

**Final Mission Planning**

Final mission planning often occurs via email or telephone; however, a final site survey is sometimes required based on the situation. Whatever the manner of communication, it is critical to finalize the common mission objectives with the host nation medical personnel and ensure that all logistical requirements have been met. Good communication is critical from start to finish.

Despite our best planning and communication efforts, there are invariably shortfalls that occur during humanitarian missions. The ability to remain flexible and seek solutions to overcome unanticipated problems is an important skill for leaders of humanitarian missions. Anticipating potential critical shortfalls and developing contingency plans (for example, what procedures can we perform without general anesthesia?) during the mission-planning phase helps to mitigate the impact of these unforeseen problems.12 As a rule, patient safety and quality of care must be the primary considerations with any modifications of the original surgical plan.

**Mission Follow-up**

Humanitarian missions have been criticized for failing to provide appropriate follow-up care for their patients and failing to engage in long-term efforts to improve the level of care available in the host nations.1 Thoughtful humanitarian surgeons realize that they cannot guarantee a successful outcome for even 1 patient without providing mechanisms of appropriate and sustained follow-on care. Surgery, with its requirements for highly trained staff, expensive equipment, and myriad supplies, is far more complex than other global health engagements such as immunizations, nutrition, or public health counseling.13 This complexity makes follow-up patient care and long-term improvements in host nation surgical infrastructure challenging but not impossible.

Some surgical procedures are more amendable to sustainment at the local level based on the resources required to perform the surgery. For example, repair of a cleft lip requires fewer resources than does a canal wall-down mastoidectomy. In addition, procedures that can be performed under local or regional anesthetic will require fewer resources, personnel, and postoperative monitoring than do general anesthesia cases. These factors, along with the desires of the host nation medical staff and the needs of the local patient population, must be considered when determining whether or not a particular procedure can be supported and sustained in a resource-limited hospital.

After several years of planning and leading humanitarian missions, we, like others, recognized the significant value in returning to the same location year after year.14-16 These recurring missions have allowed us to develop deeper relationships with our host nation partners and provide sustained educational opportunities (for us too), and they have provided the opportunity for long-term patient follow-up, which helps us to better understand the impact of our short-term missions. Others have also suggested that short-term, or “vertical,” surgical missions should incorporate their efforts into long-term, or “horizontal,” public health goals, thus creating “diagonal” development opportunities.17 The diagonal approach to humanitarian surgical missions requires a broader understanding of public health issues in resource-limited countries, the development of strategic partnerships with host nation medical personnel, and a commitment to investing in education and long-term health care infrastructure improvements.13,17,18 Diagonal development goals should join the delivery of safe, high-quality care as the primary objectives of humanitarian surgical missions.

**Conclusion**

Humanitarian surgical missions serve a critical global need and uniquely contribute to the personal and professional growth of those who participate. The questions and checklists in this article will hopefully facilitate deliberate premission planning, which is essential for safe, quality patient care and team safety. The development of humanitarian mission objectives, rigorous tracking of patient outcomes,
and incorporation of short-term missions into long-term public health objectives should serve as the standards for future missions.

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**Supplemental Material**
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**References**