

Special Report

Medical Missions—Overrated or Undervalued? A Single Program Experience

Randi Smith, MD, MPH; Samuel C Schecter, MBBS; Rhiana Menen, MD; Michael Cripps, MD; Richard Godfrey, MD

Perm J 2014 Spring;18(2):65-70

<http://dx.doi.org/10.7812/TPP/13-076>

The interest of the surgical community in global health has dramatically increased during the past decade as indicated by the numerous surgically focused medical missions, a burgeoning number of surgical resident applicants and programs looking to participate in international collaborations, and an increased attention given to global health by national organizations such as the American College of Surgeons and the International College of Surgeons.^{1,2} The World Health Organization identified a severe imbalance of availability of surgical services worldwide, and participation in global health programs offers opportunities to bridge the surgical service gap.³⁻⁶ Recent reports highlight the valuable learning opportunities for both local and visiting physicians and the potential to provide medical care to indigent populations that might otherwise be without technical support. The impact of medical missions is objectively measured by disability-adjusted life-years for patients treated, number of cases performed by surgical teams, fixed and relative costs of services provided, and quality outcome.⁷ Subjective assessment includes the “feel good” reward to clinicians, the value of giving back, and the intercultural experiences that come with foreign travel and exchanges.

Those who question the efficacy of global health programs point to the ill effects of “medical tourism,” a term referring pejoratively to the practice of health care providers travelling internationally to deliver health care. Medical tourism more commonly refers to patients traveling across international bor-

ders to receive health care. However, as global health care has gained popularity in America, so has the negative image of Western physicians, medical students, and college students working in the international arena with a perceived lack of continuity, cultural insensitivity, and failure to meet ethical standards in provision of care and research goals.^{8,9} The critics’ repeated theme is a need for collaborative partnership with other medical schools, universities, and health care systems. The Working Group on Ethics Guidelines for Global Health Training (with the ponderous acronym of WEIGHT) has emphasized the need for “comprehensive accounting for costs associated with programs; the goal of mutual and reciprocal benefit; the value of long-term partnerships for mitigating some adverse consequences of short term experiences; characteristics of suitable trainees ... preparation of trainees; trainee attitudes and behavior; trainee safety; and characteristics of programs that merit support by sponsors.”¹⁰

In the current climate of global health, a remarkably diverse range of experiences are available, depending on the country and region visited. All efforts are made to get things right the first time, but it is an evolving process. The University of California, San Francisco-East Bay Surgical Residency training program participates in several international efforts with a focus on surgical support and training experience. Four themes have emerged as “rules” for creating and sustaining successful international experiences; 1) attaining local buy-in, 2) effective mentorship,

3) developing institutional partnerships, and 4) program continuity. A description of efforts by participating residents to incorporate these key components and a discussion of the merits and lessons learned follows.

Five Lessons

Lesson #1: Successful International Experiences Require Local Buy-In in Guatemala Samuel C Schecter, MBBS Fifth-Year Resident

One counterpoint to arguments against surgical volunteerism sits high atop a volcanic ridge in the far north of Guatemala, 20 miles northeast of the Pacific coast and 15 miles east of the Mexican border. Nuevo Progreso, a village of 8000, is noted for beekeeping and famous for the Hospital de la Familia. Founded 40 years ago by Padre Cayetano Bertoldo and a visiting American, Jack Younger, of the Family Club of San Francisco, the Hospital de la Familia was a dependable center for health care throughout Guatemala’s devastating civil war and continues today.¹¹ It is staffed by local Guatemalan physicians and nurses and treats over 15,000 patients a year. Volunteer surgical teams from across the US, especially from the Kaiser Permanente (KP) Oakland Medical Center, come for 1 week, 4 times a year, to perform surgery on approximately 1600 patients annually.¹² Some teams have been together for over 30 years—an indicator of the continuity and dedication of the group as a whole. There is a strong connection with the KP Resident training program in Oakland in Head

Randi Smith, MD, MPH, is a Fourth-Year Resident in Surgery at the Alameda County Medical Center and Highland Hospital in Oakland, CA. E-mail: smithr@sfghsurg.ucsf.edu. Samuel C Schecter, MBBS, is a Fifth-Year Resident in Surgery at the Alameda County Medical Center and Highland Hospital in Oakland, CA. E-mail: mountain_sam@hotmail.com. Rhiana Menen, MD, is a Fourth-Year Resident in Surgery at the Alameda County Medical Center and Highland Hospital in Oakland, CA. E-mail: rhiana@rhiana.org. Michael Cripps, MD, is an Assistant Professor of Surgery at the University of Texas Southwestern in Dallas. E-mail: michael.w.cripps@gmail.com. Richard Godfrey, MD, is a Surgeon at the Alameda County Medical Center and Highland Hospital in Oakland, CA. E-mail: richgodfrey77@gmail.com.



Samuel Schecter, MBBS, (left) working with Paul Butler, MD (right).

and Neck Surgery, led by Raul Cruz, MD, and with Anesthesia, led by Diane Salomon, RN, and Ricardo Charles, MD. Between visits, local physicians identify surgical candidates for the volunteer surgical teams consisting of 40 to 50 anesthesiologists, nurses, scrub techs, and surgeons. Keys to the program's success rest on 1) a well-maintained infrastructure at the site, 2) support from the local populace, 3) a committed core of medical volunteers who anchor the surgical teams, and 4) a 40-year history of continuity.

The hospital is managed by the nuns of the Catholic Church stationed in Nuevo Progreso. The Mother Superior is an imposing presence as she runs an efficient outpatient and inpatient nursing corps, complete with a nursing school. The Guatemalan medical staff is comprised of 4 rotating primary care physicians who share responsibility for both inpatient services and outpatient clinics. I participated in general surgery at the Guatemala medical mission in February 2011 with ear, nose, and throat; obstetrics-gynecology; and pediatric plastic surgery teams working side by side 10 to 12 hours a day. Sharing a 4-table operating theatre complex, the team coordinated its schedule every morning in the clinic and every evening after rounds. Ophthalmology's separate team and facility screened close to 1000 patients and performed 90 eye surgeries.

I was supervised by two faculty attendings in the operating room, the clinic, and the wards. By many program standards, the teaching experience was more intense than what might be experienced in an accredited hospital in the US. A memorable experience was the arrival one morning of a Mam, or native Mayan, unable to speak either English or Spanish. He had a large incarcerated hernia and it could not be determined if he had eaten recently. His hands were raised in prayer, and his expression was one of impending doom. Fortunately, surgery was not delayed because his small bowel had infarcted, and only through a major resection was he able to survive. This patient did well and his prayers were answered.

Having a Guatemalan surgeon on the team might have been beneficial to the patient as the Americans were scheduled to leave the hospital the following day; language issues would have been mitigated and there would have been more reliable postoperative care. One may question whether it was ethically sound to perform a major operation, leave the next day, and have local general physicians following the patient, but the alternative was to do nothing and have the patient potentially die from bowel necrosis. In this instance, we did the right thing. A collaborative partnership with a Guatemalan-based surgical program does not currently exist, but

coordination with a national program would offer advantages to Guatemalan residents in training as well as to the American program.

The Hospital de la Familia has become ingrained into the culture of the village and beyond. Northern Guatemala and nearby Southern Mexico know when the surgical teams are scheduled to arrive, and patients travel hundreds of miles to receive care. Reflecting back on the four basic principles, three are well established at this medical mission site: including good mentorship, local buy-in, and continuity. Institutional partnerships with medical schools and the surgery programs of Guatemala may further develop with time.

Lesson #2: Effective Mentorship Allows Trainees to Expand their Skill and Knowledge Base in India

**Rhiana Menen, MD
Fourth-Year Resident**

As a third-year general surgical resident, I accompanied my mentor Sakti Das, MD, a urologist with years of experience both in his field and operating in international, resource-poor settings, to a small hospital in the Gujarat region of India. Dr Das has a long-standing relationship with the urologic hospital, visiting once or twice per year to teach the head surgeon, a gynecologist by training, to do more complex urologic procedures. Over the years, the local Indian surgeon has not only become proficient in these techniques, but has mastered them. In this way, a sustainable relationship has been fostered in which the majority of the general urologic procedures are now effectively managed by the local Indian surgeon, while still providing care for the highly complex urologic patients during the visiting urologists' semiannual visits.

The operating theater is equipped with three operating tables, a single anesthetist, and two highly experienced surgical scrub technicians. Initially, I operated with a local general surgeon, then continued to perform relatively straightforward cases independently at the operating table adjacent to his. In the evenings, there were opportunities to give lectures on perioperative care and

management of surgical complications to the medical officers.

These interactions with the young medical trainees afforded an invaluable personal and crosscultural opportunity. Over meals and short interludes in patient care, there were opportunities to bridge language barriers, visit local temples, watch impromptu cricket matches, and to learn how the Indian medical system structures its medical education.

I had initially sought the experience of operating under minimalist conditions and seeing pathology uncommon in the US. I anticipated seeing large numbers of nameless faces, with barebones operating rooms, trying conditions, and substandard equipment. What I gained was, paradoxically, a vision of what life as a surgeon could be. The entire staff of the hospital, from the medical officers, to the anesthesiologists, to the surgeons, lived together on the medical campus. As the only hospital for hundreds of miles servicing the poor, patients came by the hundreds each day. Operating room cases started early following morning rounds of the previous days' patients, and operative days went until late evening. During a long midday break, the staff was able to have lunch with their families and children within their quarters. Rather than a constant conflict of priority, hospital life and family life became one entity and a true sense of community was enhanced. The hospital itself was home. I was inspired by the unwavering dedication of the medical officers, anesthesiologists, staff, and surgeons who in turn were united by a desire to do the most good for the greatest number of patients in what can only be described as a calling. I was reminded of my original

purpose for attending medical school: to apply myself to the best of my ability in order to live a life of purpose.

Returning from India had a formative affect on my future career as a surgeon. I became both more knowledgeable and engaged in the needs and barriers confronting global surgery. Seeing firsthand the resource and personnel gap in the developing world guided me away from a niche surgical subspecialty and toward skills that will enable me to focus on patient needs in more global settings.

Lesson #3: Institutional Partnerships Allow for Mutually Beneficial Experiences in Tanzania

Randi Smith, MD
Fourth-Year Resident

East Africa has a tremendous shortage of surgeons and a rising burden of traumatic injury and life-threatening conditions requiring surgical intervention.¹³ The World Health Organization estimates that 1 in 10 individuals will die as a result of trauma and 5% of women will die from a complication of childbirth in low-income countries such as Tanzania.¹⁴ There has been a recent push to build surgical and anesthesia capacity in the region by several organizations, including the College of Surgeons from East, Central and South Africa (COSECSA) (Macleod).

Residents and faculty from my home institution demonstrated a strong interest in working in East Africa, particularly in Tanzania and Kenya. My work was primarily in Tanzania, where partnerships were already established between a major Tanzanian university and various nonsurgical departments within my institution. With the goal of developing a mutually beneficial collaborative, I traveled to Dar Es Salaam, Tanzania in November-December of 2011 as an initial visit. While there, I conducted an assets-based assessment of the Department of Surgery to systematically explore how my Department of Surgery could partner with them in resident education, research, delivery of quality patient care, and community engagement (see Sidebar: Goals and Assets-Based Assessment in Tanzania). To successfully complete this task, semistructured inter-

views with key stakeholders were held. I was immersed in the clinical trenches of the general surgery residency, spending time alongside level-appropriate colleagues (junior and senior residents) for ward rounds, case and Tumor Board conferences, overnight call, and surgical procedures in the operating theatre. I took part in daily triage of critically ill patients and assisted in approximately 20 major operative cases throughout the month, in addition to giving lectures on trauma care, organizing mock trauma codes, and leading bedside rounds with surgical interns.

The clinical and surgical exposure, enhancement of cultural humility, and establishment of professional networks significantly outweighed the challenges of long travel, arduous communication before the visit, and difficulty in obtaining objective data with international colleagues. I was well received by the partnering institution and hope I have been instrumental in the advancement of their acute trauma care and trauma research capacity.

Lesson #4: Continuity Maintains Relationships and Builds Sustainable Global Collaborations in Kenya

Michael Cripps, MD

Following a series of medical missions that began in 2003, led by KP Oncologist Gail Wagner, MD, 2 nonprofits were formed to sponsor the Matibabu hospital and clinic in Ukwala, Kenya, located near the east side of Lake Victoria. Matibabu now provides care for approximately 40,000 patients a year. Tiba, the nonprofit US counterpart, helps with financial support and provides volunteers to medical and surgical teams. Grants, philanthropic donations, benefits, and a sliding scale payment system have made it possible to build the first module of the new hospital as well as a backup generator and water supply system.

I was the first surgical resident to join a team of volunteers and spent 2 weeks operating in 2 government hospitals, Siaya District Hospital and Nyanza Provincial Hospital. Supervised by surgical attendings from the KP Hayward Medical Center and the Kenyan government,

Goals and Assets-Based Assessment in Tanzania

- Establish relationships with international colleagues
- Determine surgical and anesthesia capacity
- Ensure mutually beneficial experience
- Anticipate potential barriers or adversity
- Ensure cultural humility



The Matibubu Women and Children's Hospital in Kenya.

I performed approximately 30 major and minor cases, including pre- and postoperative care. Hospital conditions were at times primitive, with no running water, electrical blackouts, and unavailability of blood transfusion. Postoperative pain care often depended on the patient's ability to purchase medications, and the surgical team would sometimes walk to the nearest pharmacy to obtain them. Spinal and epidural anesthesia, reliable techniques that were introduced to Siaya District Hospital by Annette Chavez, CRNA, are now used on a regular basis with excellent outcome. The cases at Nyanza Provincial Hospital were more challenging, and I felt I adapted well to the challenges of minimal infrastructure. My experience was heightened when sleeping in the Kibera slums, and I was woken at 3 AM to help a citizen brigade put out a large fire next door using water buckets.

A debate continues in the literature as to whether the costs of sending teams to distant countries is as effective as providing monetary or equipment support to a developing country.

Establishing an independent hospital under national control and coordinating with visiting surgeons requires sensitive and mutual understanding on all levels, from ancillary staff to the highest level of administration.

The Matibabu program is relatively early in evolution but provides strong mentorship, local buy-in, and has ac-

complished eight years of continuity. Coordination with the Kenyan government and university system has been a slow and careful process. As with the Hospital Familia program, there are benefits in establishing a binational university partnership, but also risks. Currently two Kenyan surgeons are completing their General Surgery and Orthopedic training and will continue to complement the surgical teams in future years. KP has established this hospital as an international training location, and participating medicine and obstetrics-gynecology residents similarly give positive reports of their experiences.

Lesson #5: Program Continuity in the Philippines Creates a Powerful Cultural Exchange and Facilitates Effective Delivery of Health Care

Randi Smith, MD
Fourth-Year Resident

In an attempt to produce a mutually beneficial experience for both US clinicians and Filipino citizens, the coordinators of the Bay Area Surgical Mission (BASM) have devised a successful schema for surgical missions to Daet, Camarines Norte. Biennially, a group of 20 or more surgical specialists, nurses, anesthesiologists, and operating room technicians travel to this region of the Philippines for a 10-day journey that encompasses surgical intervention,

consultation, and education. The team of surgeons is capable of general, obstetric, endocrine, and otolaryngologic surgical care.

The success of this short-term surgical mission hinges on the long-term relationship between the organizers of BASM and local hospital and political leaders. My participation during February of 2012 marked the group's 7th mission and 14th year of collaboration.

During the weeks preceding the mission, government representatives advertise the teams' arrival to the surrounding community. Hundreds of patients with various ailments line up at the front steps of the hospital for screening by team physicians. During the week, hundreds of procedures (minor and major) are performed in the four-table operating room set-up. BASM provides the personnel (many KP staff and trainees), medications, surgical instruments, and anesthesia equipment; the host hospital provides the tables and the space. Careful triage and selection allows patients to be discharged from the hospital by the conclusion of the mission. Nevertheless, local surgeons are provided a stipend for postoperative care for one week's time (for suture removal, wound checks, etc).

As a junior resident, I worked side by side with a local surgeon who practices general surgery in its purest form. I assisted in a wide range of cases including thyroid resections, mastectomies, open cholecystectomies, and hemorrhoid procedures. I independently repaired inguinal hernias and performed breast biopsies and other minor excisions. Several lessons were learned from this experience—notably insight into alternative ways of performing common and uncommon procedures. Additionally, I gained confidence in my ability as I transitioned to becoming a more independent surgeon.

My motivation to participate in this surgical mission was driven by genuine altruism and a desire to help those in need. Although the patients were grateful and wanted to take pictures to remember the experience, I realized that I gained much more than I provided; my surgical skills and knowledge of global health and health disparities were deeply enhanced. For these reasons, I

expressed to the community of Camarines Norte, “Salamat Po” (“Thank you very much” in Tagalog).

Discussion

There is currently unprecedented interest in global surgery among medical students and surgical residents in the US. In a 2009 national survey, Jayaraman et al found that 33% of general surgery residencies offered educational activities in global health and 86% offered international clinical rotations.¹² Programs cited educational advantages such as preparing residents for careers in global health as well as improving resident recruitment. The survey found that the barriers to establishing such programs were related to time constraints for faculty and residents, lack of approval from the Accreditation Council for Graduate Medical Education Residency Review Committee, as well as funding concerns. Furthermore, only 5% of program directors noted a lack of interest, and of the 47 programs not offering international surgical opportunities, 57% were interested in establishing them.¹⁵ Residents reported that benefits of international surgical electives include such important educational objectives as improved clinical acumen, decreased reliance on diagnostic tests, exposure to a broad spectrum of illnesses, and increased cultural sensitivity.^{13,14,16} Reciprocal benefits

to participating international institutions include a temporary increase in trained medical personnel in regions with a limited health workforce, opportunities for foreign faculty or residents to visit US programs, educational materials or medical/surgical supplies, and new opportunities for international collaboration.¹⁵

These beneficial collaborations between surgical associations and academic training programs have the potential to reduce global disparities in surgical care.¹² The so-called “twinning relationships support education for local providers by creating shoulder-to-shoulder training opportunities for local physicians and international counterparts.”¹³ Residents have opportunities to learn from and to educate their surgical trainee counterparts as well as medical students, midlevel providers, nurses, and other ancillary staff. Specifically in our program, residents have led teaching rounds with interns, focused on perioperative care, given basic surgical lectures, and taught techniques such as suturing and wound care. In addition, we have conducted trainee teams in mock trauma protocols—rehearsing location-appropriate scenarios influenced by Advanced Trauma Life Support guidelines.

How have the 4 themes of successful international training played out

thus far in our residency program? The first goal of obtaining local buy-in was well demonstrated in the Guatemala experience at Hospital de la Familia—a 40-year history of working in the facility certainly solidified the strong local connections. The second goal of strong mentorship was well maintained in each of the countries visited, although the surgical case load was perhaps minimal in Tanzania, a newer program. The third goal of institutional partnership is a challenging area, depending on the country location and origin of respective hospitals. When hospitals are started by American nongovernmental organizations, they can be in remote and indigent areas such as Guatemala, Kenya, India, and the Philippines, and early communication facilitates institutional coordination. Finally, the fourth goal of continuity affects each of the other goals and is a sine qua non of trust and sustainable relationship.

Residents reported that benefits ... include ... improved clinical acumen, decreased reliance on diagnostic tests, exposure to a broad spectrum of illnesses, and increased cultural sensitivity.

Conclusion

Surgical residents desire the opportunity to enhance their clinical training by working internationally, particularly in resource-constrained environments. Our experiences confirm the potential of developing more well-versed, flexible, altruistic, and confident trainees. These experiences are only successful, however, through established longstanding sustainable relationships with international institutions that prove mutually beneficial. When these conditions are met we believe medical missions are a vital component of soft diplomacy and must be highly valued for their achievements in higher education and their service to patients in need. ❖

Disclosure Statement

The author(s) have no conflicts of interest to disclose.

References

1. Shapiro HB, Warshaw AL. Charitable immunity statutes shield surgeon volunteers. *Bull Am Coll Surg* 2002 Oct;87(10):8-10, 35.
2. Powell AC, Mueller C, Kingham P, Berman R, Pachter HL, Hopkins MA. International experience, electives, and volunteerism in surgical



Surgical resident, Randi Smith, works alongside a local general surgeon and medical mission coordinator, Erna Auro, MD, in Daet, Philippines.

- training: a survey of resident interest. *J Am Coll Surg* 2007 Jul;205(1):162-8. DOI: <http://dx.doi.org/10.1016/j.jamcollsurg.2007.02.049>.
3. Macfarlane SB1, Agabian N, Novotny TE, Rutherford GW, Stewart CC, Debas HT. Think globally, act locally, and collaborate internationally: global health sciences at the University of California, San Francisco. *Acad Med* 2008 Feb;83(2):173-9. DOI: <http://dx.doi.org/10.1097/ACM.0b013e31816096e3>.
 4. Bae JY, Groen RS, Kushner AL. Surgery as a public health intervention: common misconceptions versus the truth. *Bull World Health Organ* 2011 Jun 1;89(6):394. DOI: <http://dx.doi.org/10.2471/BLT.11.088229>.
 5. Shaywitz DA, Ausiello DA. Global health: a chance for Western physicians to give—and receive. *Am J Med* 2002 Sep;113(4):354-7. DOI: [http://dx.doi.org/10.1016/S0002-9343\(02\)01307-4](http://dx.doi.org/10.1016/S0002-9343(02)01307-4).
 6. Chu KM. Surgery in rural Zambia: the rewards and challenges of treating patients in a resource-poor setting. *Bull Am Coll Surg* 2009 Jan;94(1):22-8.
 7. Shillcutt SD, Clarke MG, Kingsnorth AN. Cost-effectiveness of groin hernia surgery in the Western Region of Ghana. *Arch Surg* 2010 Oct;145(10):954-61. DOI: <http://dx.doi.org/10.1001/archsurg.2010.208>.
 8. Roberts M. A piece of my mind. Duffie bag medicine. *JAMA* 2006 Apr 5;295(13):1491-2. DOI: <http://dx.doi.org/10.1001/jama.295.13.1491>.
 9. Provenzano AM, Graber LK, Elansary M, Khoshnood K, Rastegar A, Barry M. Short-term global health research projects by US medical students: ethical challenges for partnerships. *Am J Trop Med Hyg* 2010 Aug;83(2):211-4. DOI: <http://dx.doi.org/10.4269/ajtmh.2010.09-0692>.
 10. Crump JA, Sugarman J; Working Group on Ethics Guidelines for Global Health Training (WEIGHT). Ethics and best practice guidelines for training experiences in global health. *Am J Trop Med Hyg* 2010 Dec;83(6):1178-82. DOI: <http://dx.doi.org/10.4269/ajtmh.2010.10-0527>.
 11. Hospital de la Familia [Internet]. Berkeley, CA: Hospital de la Familia Foundation; c2014 [cited 2014 Mar 12]. Available from: www.hospitaldelafamilia.com.
 12. Jayaraman SP, Ayzengart AL, Goetz LH, Ozgediz D, Farmer DL. Global health in general surgery residency: a national survey. *J Am Coll Surg* 2009 Mar;208(3):426-33. DOI: <http://dx.doi.org/10.1016/j.jamcollsurg.2008.11.014>.
 13. Ozgediz D, Chu K, Ford N, et al. Surgery in global health delivery. *Mt Sinai J Med* 2011 May-Jun;78(3):327-41. DOI: <http://dx.doi.org/10.1002/msj.20253>.
 14. Bae JY, Groen RS, Kushner AL. Surgery as a public health intervention: common misconceptions versus the truth. *Bull World Health Organ* 2011 Jun 1;89(6):394. DOI: <http://dx.doi.org/10.2471/BLT.11.088229>.
 15. Drain PK, Primack A, Hunt DD, Fawzi WW, Holmes KK, Gardner P. Global health in medical education: a call for more training and opportunities. *Acad Med* 2007 Mar;82(3):226-30. DOI: <http://dx.doi.org/10.1097/ACM.0b013e3180305cf9>.
 16. Grudzen CR, Legome E. Loss of international medical experiences: knowledge, attitudes and skills at risk. *BMC Med Educ* 2007 Nov 28;7:47. DOI: <http://dx.doi.org/10.1186/1472-6920-7-47>.

Care

The only care
That I shall share
Shall be the care of others,
And on the road
I'll halve the load
Of overburdened brothers.

— John Kendrick Bangs, 1862-1922, American author, editor, and satirist