



# Operating in the Global Theater

**The getting is in the giving:** Nigerian patients line up for consultations with the volunteers.

Two American couples share what they have learned in over 20 cumulative years of treating the world's neediest patients and detail what it takes to become a successful volunteer surgeon.

**By John and Margaret Tarpley and Donald and Patsy Meier**

**Y**ou may be familiar with the modern fable of the bus driver who vacationed on a bus because it represented familiar territory. This is not unlike the volunteer surgeon. Rather than coast lazily through diversions such as golfing, skiing, or sight-seeing, many surgeons spend their leisure time dispensing surgical know-how in underserved areas. These surgeons treat patients who are otherwise unlikely to receive expert medical care.

The four of us have served lengthy stints together at a mission hospital in Nigeria, West Africa. Two of us have taken short “vacations” together, employing our medical skills in the war-torn countries of Afghanistan, Albania, and Kosovo, and economically deprived



regions in Ethiopia and Mexico. The cumulative experience has taught us that medical volunteerism is a team sport. It requires cooperation from everyone affected by the project. This includes associates who will cover for absent volunteers; colleagues at host institutions; contributors of supplies and equipment; and family members who willingly forgo a traditional vacation for what may be viewed as a less glamorous experience or who, at the very least, tolerate the absence of the volunteer surgeon.

**ABOUT THE AUTHORS** Dr. John Tarpley is a professor of surgery at Vanderbilt University in Nashville, Tennessee, where he works with his wife, Margaret Tarpley, who has a master's in library science and serves as an associate in surgery. Dr. Donald Meier is a professor of surgery at Texas Tech University Health Sciences Center in El Paso, Texas. His wife, Patsy Meier, is a registered nurse.

The planning process for becoming a surgical volunteer is lengthy and detailed. To extract the most benefit from one's deployment, every player and contributor must be carefully integrated into the process, and we will describe how to accomplish this. The effort you put forth is rewarded immeasurably, as you will see from our stories about those whose lives have intersected with our own on these trips.

### Deciding to volunteer

What motivates someone to volunteer? Some individuals are motivated by personal faith or humanitarian ideals, believing it is the right thing to do for our neighbors in the global village. Dr. T. E. Udwadia of Mumbai, India, a pio-

neer of laparoscopic surgery in the developing world, expressed the humanitarian imperative thusly: "Surgical care for the poor is a neglected necessity all over the developing world and merits interchange and cooperation of all surgeons in all countries."

Some surgeons feel that serving as a volunteer evinces their appreciation to all the patients, teachers, coworkers, and publicly and privately funded agencies that contributed to the long and costly process of their training as a surgeon. The American College of Surgeons calls its volunteerism program "Operation Giving Back," which aptly describes this manifestation of gratitude.

The academic surgeon might wish to research diseases and

injuries endemic to developing regions. While many medical situations encountered in remote locales are very similar to those encountered in a Western surgical practice, patients are likely to present with advanced stages of disease. This provides the researcher with the rare opportunity to evaluate the long-term progression of certain conditions.

Finally, with flights available to nearly every habitable place on earth, the relative affordability of these exotic experiences when compared with other vacation options may appeal to the would-be adventurer.

We subscribe to all these reasons. The positive reinforcement we have received from the patients we treated and the health care professionals we worked with while volunteering is inspiring and another reason we continue to operate in the global theater.

### Choosing a destination

Volunteer opportunities exist on most continents. The goal is to select one that meshes with the surgeon's skills, interests, and availability. Finding a good match may be as simple as networking with colleagues or as complicated as sifting through the databases of organizations that facilitate volunteerism opportunities. Several religious organizations offer connections with missionary medical institutions and community outreach programs. While many have no established faith parameters for volunteers, others require all workers to sign a statement of belief. Nongovernmental organizations also run programs, but they may have stricter time-commitment guidelines. For example, surgeons



#### Looking to give back? Try these organizations:

American College of Surgeons (ACS)  
Operation Giving Back  
[www.operationgivingback.facs.org](http://www.operationgivingback.facs.org)

American Medical Student Association (AMSA):  
International Health Opportunities  
[www.amsa.org](http://www.amsa.org)

Doctors of the World-USA  
[www.dowusa.org](http://www.dowusa.org)

Doctors Without Borders/Médecins Sans Frontières  
[www.doctorswithoutborders.org](http://www.doctorswithoutborders.org)

Interplast  
[www.interplast.org](http://www.interplast.org)

Journal of the American Medical Association (JAMA)  
CareerNet Networking for Physicians: Volunteer Opportunities  
[www.jamacareernet.ama-assn.org](http://www.jamacareernet.ama-assn.org)

Operation Smile  
[www.operationsmile.org](http://www.operationsmile.org)

People to People  
[www.studentambassadors.org](http://www.studentambassadors.org)

Student National Medical Association (SNMA):  
International Missions  
[www.snma.org](http://www.snma.org)

**Do one, see one, teach one**

Volunteer Louis Carter, a general and plastic surgeon, has made several trips to Ogbomoso over the years, where he has worked with Nigerian surgeon Akin OlaOlorun. On a recent trip, Dr. Carter and Dr. OlaOlorun repaired several cleft lips together. Dr. Carter assisted Dr. OlaOlorun with surgical repair of this beautiful 8-month-old girl's double cleft lip. Dr. OlaOlorun is now capable of performing most cleft lip repairs on his own.



who apply through Doctors Without Borders should be prepared to commit to a minimum of 6 weeks.

Deciding where to serve may be shaped by the medical needs of a particular region, the volunteer's preferred climate, how far the location is from home, and how easy it is to communicate with the sponsoring organization or host institution. You may need to cast your net broadly and submit multiple inquiries to a desired host. Initiate this contact several months before your desired departure. Do not allow a lack of timely responses to discourage you; perseverance will be rewarded.

Remember, volunteerism does not require a passport. Several rural areas in the United States lack sufficient coverage of various

medical and surgical specialties, and urban communities may offer physicians the opportunity to work in clinics serving the uninsured. The patient roster may include refugees, immigrants, and long-time residents of distressed neighborhoods. Volunteer surgeons provide consultations and perform operations for these patients gratis.

Once you have selected a locale, you must choose a specific institution. Available medical facilities tend to fall into three categories: clinic, small hospital, and tertiary center. More operations can be performed at a hospital or tertiary center, but outpatient procedures can take place anywhere.

Some institutions may have procedure-driven needs, such as a demand for surgeons who can

perform cataract surgery or repair cleft palates and club feet. Others may have less specific needs. Ask your host "What are your needs and priorities?" "What is achievable?" Focus on improving one area of care. For example, a volunteer urologist took several cystoscopes on his first trip, vastly improving his host institution's cystoscopic capabilities. Noting the large number of men presenting with urologic problems, the urologist used subsequent visits to teach his hosts a better way to perform open prostatectomy for treating retention from prostatomegaly and to conduct a direct-vision urethrotomy for urethral stricture. Inquire about your likely duties, but keep expectations realistic and flexible.



### Volunteers' Checklist

- Choose the place and time for your trip
- Contact the host and ask what is needed most
- Investigate visa requirements
- Apply for a passport or confirm that yours is still valid
- Check requirements for medical licensure and malpractice insurance
- Research necessary immunizations and health recommendations
- Obtain emergency evacuation insurance
- Book your flight and inquire about baggage and weight restrictions
- Pack a basic surgery text and atlas
- Obtain any necessary equipment or supplies that are unavailable at the host institution
- Confirm your arrival information with your host

If you do not understand the primary language spoken at your destination, ensure that translators will be available. This is vital for assuring patient safety and a positive experience for everyone. If you are traveling as part of a team, other team members may be able to serve as translators.

### Family considerations

We encourage you to turn the volunteer excursion into a family

experience. Although taking the family adds to the pre-trip legwork, the social, cultural, and educational benefits of these trips are priceless. If your family will be accompanying you, determine whether appropriate lodging exists for couples and children and ask the host institution if family members can participate in an ancillary role. This might include organizing supply closets, cleaning, painting, or visiting with hospitalized children. Maintenance is always needed, and skilled family members who can repair or fine-tune equipment will find themselves very appreciated. Computer skills are also in demand as many places move to establish databases of medical information and Websites.

Remember, addressing medical needs is the first priority. Schedule any recreational activities for the conclusion of your service. Although volunteerism is rewarding, it can be challenging physically and mentally, and you will appreciate a subsequent change of pace.

### Laying the groundwork

Now that you have selected a locale and an institution, you must pin down a mutually convenient date with the host institution. Since it takes months to prepare for an international assignment to a financially deprived nation, you must do your homework. First, research the country's requirements for visas, medical licensure, and malpractice insurance. Secure emergency evacuation insurance; this is inexpensive, easily obtained, and essential, because traffic accidents present the greatest safety risk in many underprivileged countries. Review health recommendations for foreign travelers;

you can obtain a list of suggested immunizations, malaria prophylaxis, and other health considerations from your travel agency or on the Web at <http://travel.state.gov>. Next, assess how much time you need to arrange travel, acquire a visa or passport, and comply with all health and immunization guidelines. Then, propose a timeframe that accommodates everyone involved. Keep in mind that your objective is to assist the host. Try to compromise rather than offer a take-it-or-leave-it date. We recommend that you plan to stay for at least 2 weeks, a timeline which factors in the anticipated length of travel, resultant jet lag, and time spent getting oriented to your new environment. Once you have notified your hosts of your travel arrangements, avoid making last-minute changes. Communication may be problematic, and ground transportation arrangements are not always flexible.

We strongly suggest that first-time volunteers join a group being assembled by a seasoned volunteer. This will relieve you of some of the more time-consuming aspects of preparation.

### What to pack

To maximize your professional contribution, ask your host for a list of medical goods—such as catheters, sutures, gauze, and gloves—needed to supplement the institution's stock. Bowel anastomoses are likely to be performed using sutured, open techniques since staplers are rarely available. Fishing line makes a serviceable substitute for sutures, which are often in short supply. Be mindful of possible tension between state-side standards of practice and the

appropriateness or sustainability of procedures such as laparoscopy, open reduction, and internal fixation of fractures.

Various medical centers in the United States collect supplies and older equipment for nonprofit clinics, hospitals, and volunteer missions. Surgeons who are unable to volunteer can still contribute by donating supplies for their colleagues to take along. A donated used endoscope allowed author John Tarpley to retrieve a swallowed coin from a child's distal esophagus, establishing his reputation as

a competent surgeon among the locals and gaining their trust.

Voltage differences between countries may require transformers or adapters for any electronic equipment, including that taken for personal use, so be sure to check. If you plan to transport a significant amount of medical goods, consult the airline regarding baggage limitations or excess weight charges.

The volunteer often will be expected to perform or assist with procedures not done since residency. We recommend that you

take along a recent edition of a basic surgery textbook, up-to-date articles on surgery relative to the geographical area you are visiting, and an atlas. Consider leaving these behind with the host, who will be very appreciative.

If you regularly lecture or administer continuing medical education sessions stateside, let your host know of your willingness to share this information with the medical staff and students. Most places welcome any supplemental education. Although computers, projectors, and Internet



Hospital ward in Nigeria, showing improvised traction frames on the right.



Patsy Meier assists pediatric surgeon Dr. Miliard in the Black Lion Hospital in Addis Ababa, Ethiopia.



Dr. Meier instructs a host colleague between rounds.



Medical student volunteers visit with a burn victim and the child's mother.

access are proliferating worldwide, ask your host what is available, in case you need to take your own equipment with you.

Your hosts can suggest appropriate clothing and surgical attire; slacks for women and shorts for either sex are inappropriate in some regions. If your family will be joining the mission, pack a hearty supply of reading material, games, toys, and snacks to supplement the limited items available locally. If any of you require medication, take enough to last for the trip's duration. Pack any personal items you desire, such as a camera, film, or batteries, because they may not be available at your destination.

### Settling in

The Nigerians have many proverbs, and two are especially relevant to the surgical volunteer: "Who knows tomorrow?" and "No condition is permanent." When you arrive, your expectations—based on descriptions or communication from your host—may not match

reality. Accommodations may be the best your hosts can provide but lack even a single-star rating. Electricity and fresh water may be sporadic. Conditions at the medical facility are likely to be "low tech," offering none of the advances you have come to depend on, and the operating room (often called the theater) may have only the basics: instruments, lighting, and an adjustable table. General surgery is aptly named here and is usually conducted without laparoscopes, microscopes, frozen sections, or intraoperative radiology. Procuring

safe anesthesia will likely be your greatest challenge, and surgeons often act as their own anesthesiologists or must rely on spinal or local anesthetics. Lack of a ventilator or electricity may mean hand-bagging an intubated patient for many hours, assuming you have the staff to assist. Intensive care units (ICUs) are rare, with the operating room hallway or postanesthesia care unit doubling as the ICU.

Despite the initial shock you may feel at these less-than-stellar conditions, remind yourself that this is why you volunteered—to help out where the need was greatest. Practice cultural sensitivity and avoid criticism of the hospital facilities, living accommodations, food, climate, or political situation. Watch for actions or procedures to compliment, and maintain a good attitude. Avoid making comparisons between the host facilities and your own. Early on in our experience, we would mourn a bad or tragic outcome and say to one another, "If we were in Dallas (or Baltimore or Nashville), this patient would have survived." Save these sentiments for private moments with family or team members.

Maintain a respectful attitude toward surgical and medical col-



Be prepared to treat many victims of motor vehicle crashes. Unsafe driving practices in underdeveloped areas result in frequent traffic collisions.



### Ambulation beats amputation

A 20-year-old man was a passenger in a taxi that was involved in a motor vehicle collision. He sustained an open tibial and fibular fracture of the mid-left leg, with a devascularized segmental tibial comminuted fracture. Volunteers Dr. Kendig and Dr. Sheri Slezak, a plastic surgeon, helped local surgeons salvage the limb. They used an external fixation device, a soleus flap, and a skin graft. After several months of healing, the patient was ambulatory. The only alternative to this salvage operation was a transtibial amputation. Long bone extremity injuries are leading causes of morbidity for people in Nigeria, where road traffic crashes are frequent.

leagues, the nursing staff, and hospital employees. Speak in a soft voice and avoid physical contact. Address persons by title or as Mister or Miss, which are always correct; people will let you know if they prefer that you use their first names. Always ask permission before photographing anyone. Do not discuss your trip expenses or remuneration with your host colleagues, who are painfully aware that medical professionals in the United States and European countries have incomes several times greater than their own. Inquire about conservation practices for water and electricity; we tend to be wasteful with these utilities in the United States. These are basic displays of cultural sensitivity. When unsure of

an appropriate behavior or response, ask your host or practice the Golden Rule of “Do unto others as you would have them do unto you.” This is a nearly universal teaching and continues to be a reliable guide to behavior. The relationships you develop with your host colleagues are as vital as the patients you treat.

“Fit your suit to your cloth” and accept what you find. The best way to introduce improvements is collaboratively and gradually. Remember, you are joining an established team as a temporary substitute; your host is the coach. Even if you are covering for the coach, you must resist any urge to “rewrite the playbook,” which could compromise patient care in ways you cannot anticipate. The

patients and hospital greatly appreciate the surgeon’s efforts, and perfection is not expected. Do the best with what you have.

### Patient care and challenges

The first activity for the volunteer surgeon is evaluating prospective patients and prioritizing those who can be helped during the visit. Expect clinics to be crowded. The operations that need to be scheduled often exceed the time allotted for your visit, forcing you and your colleagues to make difficult decisions. Weigh the operation’s educational value for local physicians against benefits for the patient. Teaching a skill such as burn contracture release or wound care will allow your expertise to proliferate and benefit future patients.



Dr. Tarpley's improvised ostomy bag.

You may imagine that most of your time will be spent treating patients with tropical diseases and exotic conditions. In reality, you will likely help many victims of

motor vehicle crashes. A proliferation of inexpensive motorcycles and a tendency to pack trucks with as many occupants as they can hold, combined with a lack of enforced traffic rules and poorly maintained roads and vehicles, make traffic collisions the greatest health risk in many developing countries. There is also a great need to address congenital and traumatic pathology, such as club feet, cleft palates, unstable fractures, and burn contractures.

Treating patients in such economically deprived areas can be challenging. With limited radiology services available, surgeons must rely on performing a complete physical and getting as much history as can be elicited. In locations where many languages are spoken (something that is not

uncommon in parts of Africa), the patient may have poor English skills and a translator may be necessary. This can complicate things if the translator is paraphrasing what the patient says rather than translating it.

Improvisation becomes essential. Dr. Tarpley developed an ostomy bag from a tin can, a plastic bag, string, and a strip of tire inner tube. Food-storage bags, available at local markets, can serve as gloves for examining patients. Toilet paper can suffice as padding for plaster casts. We constructed traction weights from paint cans and stones or concrete.

Colleagues back home can be valuable resources. Do not hesitate to elicit e-mail consultations. A 20-year-old Nigerian man came to the hospital concerned primarily with

### Case 3

#### The gift that keeps on giving

This 10-year-old Nigerian boy spent his time begging at a speed bump on the major highway. He suffered from polio and had flexion contractures of his lower extremities but good power and function of his upper extremities. He literally crawled into the clinic. He was admitted and put in traction. Percutaneous tenotomies were performed as taught by volunteer Ron Kendig, an orthopedic surgeon. The boy was hospitalized for 2 weeks and then fitted with calipers (braces), which were constructed locally by a former polio victim who worked as a cobbler. With the aid of calipers and crutches, the boy was able to stand. Too weak to serve as a laborer, his family sent him to school, and he became a schoolteacher. Hospital care: \$20; braces and crutches: \$25. It cost this boy's family \$45 to transform him from a beggar to a teacher.



his inability to ride his bicycle the 5 miles from home to work. The patient had suffered a progressive bilateral genu valgum for 2 years. Dr. Meier sent copies of the patient's radiographs to the late orthopedic surgeon Ron Kendig in Mississippi. Using Dr. Kendig's cookbook instructions, Dr. Meier performed bilateral distal femoral osteotomies and put the patient in donated external fixators. The young man was back to riding his bicycle 3 months later.

Just as fee-for-service is required in the United States, professional services administered at the host institutions cannot be given away. Some patients may have insufficient funds to pay for a scheduled procedure and may fail to return for a much-needed operation. Ask your hosts before you travel how you can subsidize particularly worthy patients without causing undue problems. Always remember that your hosts must care for these patients after you leave.

As time for your departure nears, keep in mind the level of postoperative care required for complex procedures and limit your cases to those the remaining staff members can manage safely. Accept that some patients will show up too late for your help. Counting your victories instead of defeats enhances the rewards of surgical volunteerism.

## Going home

Your working vacation is over, and it is time to return home. It can be difficult to leave recovering patients behind. You may also leave with the feeling that there was not enough time, because so much more needs to be done. Back home, with time for reflection, ideas on how to deal with particular challenges at the host hospital may germinate and surface. For many volunteer surgeons, that first-time visit will serve as a reconnaissance mission for future trips.

A return visit can allow volunteers and hosts to improve infrastructure or develop algorithms for addressing what were previously thought to be insurmountable problems. Subsequent to his first



Medical staff at Baptist Medical Centre in Nigeria pose with three surgical volunteers: plastic surgeon Louis Carter (front row, center); pediatric surgeon Jire Idowu (front row, far right); and general surgeon John Tarpley (back row, third from left).

trip, one pediatric surgeon developed an algorithm for his host institution to diagnose and treat Hirschsprung's disease in children without using mucosal biopsies and pathologists, which were not readily available.

In the best of circumstances, you have earned your host's trust and developed a positive relationship with your host colleagues that will continue beyond your visit. E-mail allows the willing volunteer to become a long-distance consultant who understands the host institution's particular situation and can offer relevant advice.

Most volunteers come away feeling that they have reaped personal benefits in excess of what they accomplished surgically and gained something far more valuable than what they might have received from a traditional vacation. As for what you have given, it extends far beyond the welfare of those patients you treated personally. Surgical volunteerism is the proverbial gift that keeps on giving, and the knowledge you shared with your host colleagues may someday save the lives of people you have never met. If you have already spent time as a volunteer, maybe it is time to think about going back. And if you have yet to become a player on the global stage, maybe it is time to pack up your scrubs and stethoscope and sign on for a working vacation! ●●