

A composite image. On the left, a close-up of a surgeon, a Black man with a beard, wearing a grey t-shirt with a logo and glasses hanging from his neck. He is looking down at a patient lying on a stretcher. The patient's head is visible at the bottom. On the right, a wide-angle view of a densely packed city with many buildings that are severely damaged or destroyed, with rubble and debris everywhere. The sky is clear and blue.

Surgeons respond to the needs of a broken nation

by
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On Tuesday, January 12, a 7.0 force earthquake struck the nation of Haiti, killing at least 200,000 people, delivering devastating blows to more than 300,000 bodies, and ravaging families, homes, and the island's entire medical infrastructure. At least one Fellow of the American College of Surgeons was in Haiti that day, while another Fellow, a native Haitian, began communicating with the College's leadership to coordinate an organization-wide response to the disaster.

Peter Meade, MD, FACS, a general surgeon at Tulane University Medical Center, New Orleans, LA, was completing a one-week surgical mission sponsored by the Coalition of Children in Need Association in Ouanaminthe, Haiti, about 200 miles north of the earthquake's epicenter in Port-au-Prince. "Having lived in California for 20 years, I knew what an earthquake felt like, so when the building started to shake, I told everyone to get out. I stayed where I was because I was in the middle of an operation. The shaking lasted only about a minute and a half, but it felt much longer," Dr. Meade said. "Because the building I was in held together, I didn't realize the enormity of the situation until the next day, when we started getting reports from CNN and other news organizations through our Blackberrys."

Meanwhile, those same forms of communication were delivering the horrifying news to people back in the states, including Henri Ford, MD, FACS, professor and vice-chairman, department of surgery, and vice-dean for medical education, Keck School of Medicine, University of Southern California, Los Angeles. Dr. Ford called Haiti home for the first 14 years of his life, and several of his family members still reside there. When the earthquake hit, Dr. Ford was completing a visiting professorship at Duke University Medical Center, Durham, NC.

"Once I had learned about the devastation that had taken place, it was clear to me that I needed to get myself to Haiti for the simple reason that,

Opposite, left: Dr. Ford with a patient in Haiti. Right: an aerial view of the destruction wrought by the earthquake.

Photographs for this article provided by Drs. Born, Bulger, Campbell, Casey, Eastman, Knudson, Rogers, Sakran, and Shackford.

when I reflected on all that I have been doing all my life, it occurred to me that I had been preparing to intervene in a catastrophe such as this one. Being a Haitian-American—someone who speaks the language, who knows the territory, who is a pediatric surgeon with expertise in trauma—when I saw bricks falling on little children, it was clear to me where I belonged," added Dr. Ford, who is also vice-president and surgeon-in-chief at Children's Hospital of Los Angeles.

However, Dr. Ford had one very important piece of business to take care of before he could leave the U.S. He was scheduled to attend the ACS Committee on Trauma (ACS-COT) meeting on January 13. During the course of the meeting, Dr. Ford worked with College officials—including the Chair of the Board of Regents, Brent Eastman, MD, FACS; ACS Executive Director David Hoyt, MD, FACS; and the Chair and Vice-Chair of the Committee on Trauma, John Fildes, MD, FACS, and M. Margaret Knudson, MD, FACS—to secure the College's commitment to developing an organization-wide response to the crisis. The COT, the College's Operation Giving Back program, and key College staff sprung into action. For the two-week period immediately following the earthquake, Dr. Hoyt, Dr. Eastman, and others who were instrumental figures in this effort sent almost daily e-mail updates on the College's activities to the membership, describing how Fellows could get involved and prepare for deployment. The College also operated a telephone answering center and encouraged volunteers to sign up online and then link with relief groups. Approximately 950 ACS members, including Dr. Eastman, volunteered their services. (For details about Dr. Eastman's activities, see the sidebar on page 10.)

"[The ACS leadership] really put together a massive response, a massive call to action, mobilizing other trauma surgeons to go down to Haiti. It was absolutely overwhelming to me," Dr. Ford said.

Teams deployed

Now confident that the College would be supportive of surgeons who wanted to help the people of Haiti, Dr. Ford departed for his homeland on January 16. Like many other surgeons who were



Scenes of post-earthquake destruction in Haiti. In the bottom photo of the collapsed pediatric hospital, a bed can be seen near the edge of the remaining tower at left.

among the first responders to the crisis, Dr. Ford is involved in the National Disaster Medical System (NDMS), which is run by the U.S. Department of Health and Human Services. NDMS deploys Disaster Medical Assistance Teams (DMATs) and International Medical-Surgical Response Teams (IMSuRTs). DMATs are specifically designed for patient triage and emergency room-based care, whereas IMSuRTs are designed to operate field hospitals with operative capability. The U.S. has three IMSuRTs, covering the western, eastern, and southern coastal areas.

Other surgeons made their arrangements through universities with strong ties to Haiti, according to Dr. Knudson. For example, Steven

R. Shackford, MD, FACS, a vascular surgeon in San Diego, CA, has been going to Haiti with a team from the University of Vermont since 2003. This group of nurses, anesthesiologists, and two surgeons generally provides assistance at Hôpital Sacre Coeur, which is based in Milot and supported by the CRUDEM (Center for the Rural Development of Milot) Foundation. His daughter, Maureen, is a nurse and has accompanied him on several missions, including this one.

Selwyn O. Rogers, Jr., MD, FACS, got involved in this particular effort to assist the earthquake victims through Partners in Health (PIH), which is based in Boston and has strong ties to the Brigham and Women's Hospital, where he specializes in surgical critical care. A surgical resident, Joseph Sakran, MD, has a special interest in global health initiatives and was able to participate in this particular effort through the help of Russell Seneca, MD, FACS. Dr. Seneca had been to Haiti numerous times through a collaboration that Inova Fairfax Hospital has with the Community Coalition for Haiti, Dr. Sakran said.

The surgeons who went to Haiti all agree that being involved in government- or university-based medical assistance programs or not-for-profit organizations was an important factor in getting to Haiti in a timely way and being able to accomplish as much good as possible.

Eileen Bulger, MD, FACS, who is active in the West Coast IMSuRT, said, "These groups take responsibility for ensuring that medical and surgical teams are organized ahead of time, that team members have been properly vaccinated, and that they are prepared to go at a moment's notice." Surgeons who carry out disaster relief efforts through well-established channels have all the resources they need. "They have the equipment, they have the security, they have the transportation," Dr. Bulger explained. "I think when people get into trouble is when they want to help, but aren't prepared and don't go in an organized system. They get down there and find themselves in a situation where they can't do very much."

Christopher Born, MD, FACS, professor of orthopaedic surgery, The Alpert Medical School of Brown University, Providence, RI, is involved in the east coast IMSuRT. "The way our team is constructed, there is a large pool of people who are credentialed for the team, including nurses,

emergency medical specialists, emergency medical technicians, pharmacists, surgeons, administrative people, logistics people, and so on. From that large pool, they were able to pull a team together in 12 hours,” Dr. Born said.

“Shortly after the earthquake struck, I contacted PIH medical director Joia Mukerjee, MD, and informed her that I would be willing and able to go at a moment’s notice. She arrived in Haiti on January 14 and arranged for a group of 15 nurses and physicians to be chartered on a flight to Port-au-Prince on the 16th,” Dr. Rogers said, explaining how PIH was able to pull together a team.

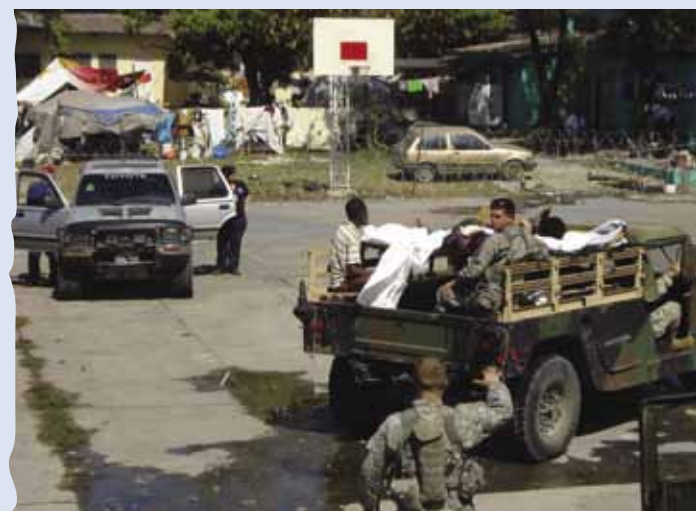
Thomas Scalea, MD, FACS, a trauma surgeon at the University of Maryland, went with a group representing that institution. “Because we had the relationships in place, we were able to get this up and going in a day or two,” he said. “We got there within about 10 days after the earthquake struck.” His 15-member team included representatives from nursing, anesthesia, orthopaedic care, general surgery, emergency medicine, and so on.

Getting there

Even some of the most well-established groups, however, were briefly thwarted in their efforts to provide immediate assistance due to logistical, security, and uncontrollable problems, including a 6.0 aftershock that slammed Port-au-Prince on Monday, January 18.

“It was difficult to get into Haiti because the flights were so limited. You basically had to have a number to get in. They didn’t have an air traffic control tower anymore—just some guys out on the airfield with walkie-talkies. They didn’t want anyone to get hurt, so they were trying very hard to avoid having a huge overflow of people all trying to land at the same time,” according to Sylvia Campbell, MD, FACS, a general surgeon based in Tampa, FL, who has done relief work in Haiti for 14 years.

Dr. Born said the biggest issue for his team was security. “We went from the airport to the American Embassy, and we stayed there for three days because they wanted to find a facility that could be properly secured. They didn’t want to put us out in the middle of a big soccer field where it would not be possible to secure the perimeter of the facility. I think at the moment that was



Port-au-Prince, Haiti: Carrying and loading patients for helicopter evacuation from the IMSuRT Gheskio Field Hospital to the USNS *Comfort*.

an understandable decision, but it delayed our ability to set up the field hospital,” Dr. Born said.

Initial reactions

Although surgeons who have been involved in DMATs and relief groups were trained and ready to answer the call for help as soon as it
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The camp set up for members of the IMSuRT team on which Dr. Bulger served.



Nursing staff with young earthquake victims at the IMSuRT Gheskio Field Hospital.

was issued, nothing could really prepare for them for the devastation they would find on the ground—homes and buildings leveled, parents searching for missing children, heaps of rubble covering crushed bodies, the stench of decaying corpses hanging in the air, and the look of peril on people's faces.

Arriving in Port-au-Prince “was one of those life-changing experiences that just leaves you breathless. I saw more devastation, more injuries, more suffering than I ever thought imaginable or possible. The images that were being broadcast on TV and the Internet did not capture the desolation and devastation that really was taking place,” Dr. Ford said.

“I’ve been going to Haiti since 1996, so I have a pretty good understanding of the people and of the country and of the poverty that’s there, along with the lack of medical care and of food and things like that, but I could never have imagined anything as awful as this,” Dr. Campbell, who arrived in Haiti on January 16, said. “There was so much devastation and so many injuries and no way to get them treated correctly.”

The emotional damage from the earthquake was inestimable. Walking out of the airport in Port-au-Prince, Dr. Sakran saw that “a sea of Haitians filled the streets, most of whom were standing behind the metal barricade put up by the U.S. Army. One could see the look of desperation in their eyes.”

Dr. Campbell concurred. “Haitian people don’t complain much. They accept their fate in a way that’s just uncanny because they’ve faced so much tragedy over the years. But in this case, it was almost like they were in a state of shock. They didn’t have a lot to say. They didn’t cry. They just had a look of despair,” Dr. Campbell said.

After traversing the rugged terrain around them and reaching a specified location, the first assignment for many surgeons was to get field hospitals and clinics up and running.

“When we got there, there was pretty much nothing,” Dr. Scalea said. “Sanitation was horrific. People were dumping human waste right outside the hospital tents and washing their clothes downstream with the same water. And the tents weren’t even tents when we got there. They were sticks with a tarp on them,” he said. His team set up a pharmacy, supply room, three operating rooms, and a smaller procedure room.

Dr. Ford’s team set up a field hospital at Université Quisqueya, which was designed to care for HIV and tuberculosis patients. “On the soccer field of the university was a very large tent city that housed 7,000 refugees,” he said. “A lot of the patients we cared for came from that tent city, but also from other places.”

As a trauma surgeon, Joan L. Huffman, MD, FACS, assistant professor of surgery at the University of Florida, Jacksonville, was instrumental in establishing a mobile clinic that served the tent cities in some of the poorest areas surrounding Port-au-Prince. Although she was the lead physi-

cian on her team, she had never before participated in, let alone overseen, a disaster response effort. Hence, she left some of the management-related aspects of running the medical center to another physician. “We had a family practice intern from Brown who had actually been in Haiti three times before, so he knew how to operate a mobile clinic,” she said.

Dr. Rogers’ team deployed to St. Marc, about 60 miles north of Port-au-Prince, which had two functioning operating rooms. “It was a PIH-supported hospital that we got up and running and transformed into a smooth machine, conducting 20-plus operations per day,” he said.

Hôpital St. Francois de Sales, where Dr. Shackford’s team was based, was in shambles. “The hospital, except for one building, which had recently been built by the global health ministry as a birthing center, was destroyed. Basically, we had to bootstrap the hospital, because the staff was terrified to go back into the building because of the earthquake and the aftershocks,” Dr. Shackford said.

Furthermore, many of the Haitian medical personnel were still reeling from witnessing the collapse of a four-story pediatric hospital attached to the main building. “The estimates are that there were 200-250 children in that building, many of whom were alive after the collapse. The staff could hear them calling for help, and there was nothing that they could do. That tragically affected the staff,” he said.

Crush injuries, necrotizing infections

News of the field hospitals and clinics spread quickly. “As soon as the people in the tent cities found out that we had a functioning hospital, we went from seeing 50 patients in triage to seeing 350 a day, and they just kept coming,” Dr. Shackford said.

In the earliest days of the effort, surgeons were typically treating open fractures, closed fractures, crush injuries, blunt and penetrating trauma, burns, and fatally infected wounds.

Dr. Ford reported doing laparotomies for people who had been in buildings that had collapsed on their abdomens. In addition, he said, “We had a girl who had a penetrating skull fracture because the ceiling collapsed on her head. A brick



Debra Weiner, MD, pediatric emergency physician from Children’s Hospital, Boston, MA, intubating a newborn with respiratory failure after a crash cesarean section.



With a patient treated for multiple gunshot wounds: David F. Lawlor, MD, FACS (left); Dr. Bulger; and Ara Feinstein, MD.

was essentially impaled in her skull and was pressing on her brain.” Dr. Campbell recounted the story of a little girl who had half of her face burned off. “She had crawled under a car when the earthquake hit, and the car was running, and the exhaust burned her face and arm, straight up



Paramedic Jeffery Allen with an injured baby.

her shoulder, through to the muscle,” Dr. Campbell said.

Dr. Rogers estimated that he treated more than 140 patients with orthopaedic and soft tissue injuries. Dr. Huffman calculated that 1,000 people received care through the mobile clinics her 25-member team operated for 10 days. Dr. Bulger, associate professor of surgery and a trauma surgeon at the University of Washington, Seattle, arrived in Haiti about 10 days after the earthquake for a two-week rotation. In a total of six weeks, the members of her IMSuRT saw about 3,000 patients and did 300 operations, she said.

As Dr. Bulger’s data imply, surgeons in Haiti had to do much more than operate. “In this type of situation, where the medical infrastructure is completely compromised, places like ours literally become the county hospital for the area, because there is no place else to get medical care. So we would have to care not only for patients with the acute injuries sustained during the earthquake itself, but, with the passage of time, you start seeing people who have other medical needs that they would have had irrespective of whether or not there was an earthquake,” Dr. Born said.

In addition, they had to deal with health care problems that are specific to Haiti, like malaria, typhoid, and a host of other tropical diseases. “We saw a lot of infectious diseases that people

don’t get [in the U.S.] because they get vaccinated. We had a child with full-blown tetanus,” Dr. Bulger said.

“One of the things that I think made us a very powerful team is that we had two or three infectious disease doctors with us on every team. They were able to provide generalist internal medicine support, as well as support for specific infectious diseases. Their presence made the surgeons a whole lot more effective,” Dr. Scalea said. Almost all of the participants said they delivered a fair number of babies, as well.

Frustrating to many of the surgeons involved in the earliest stages of the relief effort was the fact they were often working with limited access to electricity and in unsanitary conditions.

“We couldn’t operate too late into the evening because there wasn’t any electricity. Luckily, I brought a battery-operated headlight, which someone had loaned me. It really helped a lot in the OR, where the light wasn’t very good,” Dr. Campbell said.

“I didn’t have access to any sterilization equipment for my instruments, so basically I would clean them with a baby wipe and then soak them in peroxide and shake them in a baggie of alcohol. I did all clean procedures—no sterile procedures,” Dr. Huffman, who is both a trauma surgeon and wound specialist, said. “It was pretty shocking the first day, when I was debriding wounds and cutting off fingers, to see flies sitting on my wounds; but by the end of the week I didn’t even notice them anymore.”

The surgeons also had to do without many of the drugs, supplies, and instrumentation that they use on a daily basis in the U.S. For instance, Dr. Rogers said his unit had no computed tomography (CT) scanners, no intensive care unit, and no ventilators. Several surgeons noted that they had little or no anesthesia, and were often reliant on local anesthetics and large doses of over-the-counter pain relievers.

“When we first got there, there were not a lot of supplies. They started getting there before we left,” Dr. Campbell said. “We got to a point where we were mixing sugar and Betadine to put on wounds because we didn’t have anything else.”

Dr. Shackford said of the first day at Hôpital St. Francois de Sale, “Our ‘scrub sink’ was a spigot on the outside of the hospital. We had nobody

to transport patients. We didn't really have any reasonable X-ray [machine]. There was a lab that was set up and functioning in a tent, and there was a pharmacy set up and functioning in a tent. But everything else, we had to do," Dr. Shackford said.

In many cases, the problem wasn't a lack of basic resources per se, but a dearth of the right kinds of equipment. Dr. Sakran reported that his crew had bags full of broad-spectrum antibiotics. "Is this really what Haitians needed during this disaster? In my opinion, resources should be tailored to the specific needs of the community. What we needed was equipment for basic wound care, such as bandages, saline, gauze, cast material for fractures, intravenous fluids, and vaccines to protect against tetanus," he said.

Dr. Ford noted a marked shortage of appropriate instrumentation for treating the Haitian population. "When you're going to a country where half the population is younger than 15, you need to figure that you're going to need supplies that are designed to treat children. Not only did we run out of supplies in general, which was because people had underestimated the number of people who were going to be injured, but also we didn't have anything to handle the children adequately," he said. For example, his team didn't have any pediatric ventilators for children who had been critically injured. "It took more than two weeks for us to get one. So we had to support the children by bagging them—ventilating them by hand—for 14 hours or longer until we could transfer them to the USNS *Comfort*," Dr. Ford said. (Run by the U.S. Navy's Military Sealift Command, the USNS *Comfort* is an oceanic vessel equipped to serve as a general hospital, and is usually used for humanitarian efforts.)

Due to the lack of sufficient or useful supplies and equipment, surgeons found themselves needing to rely on the diagnostic skills they learned in medical school, many of which certain specialists have not needed to call upon since. Dr. Campbell noted that to determine what was wrong with a patient, physicians needed to really look at the patient, talk to the patient, and touch the patient. Many surgeons, including Dr. Scalea, found they really enjoyed the opportunity to interact with patients on that level, after many years of just reading scans and X rays and having little contact with patients prior to operating on them.



Left to right: George Dyer, MD; Dr. Rogers; and Dr. Thomas, a Haitian orthopaedic surgeon, examining the extent of gangrene of a patient's left leg prior to amputation.



Dr. Campbell with an earthquake victim.

According to Dr. Bulger and others, however, some surgeons are more comfortable making diagnoses without an armamentarium of images. "If you're a trauma surgeon, you're used to making decisions with very limited data. Sometimes you just have to act on the way the patient looks in the emergency department and take him or her to the operating room without really having a definitive diagnosis. So, I think, for trauma surgeons, it's not as hard a transition; but I do think for some specialties that are very dependent upon the CT scanner or other equipment in order to make a diagnosis, it could be difficult. This is the ideal situation for trauma surgeons to be involved," Dr. Bulger said.



Postoperative patient at the mobile clinic established in the courtyard of a devastated church in Port-au-Prince.



Transporting patients with multiple injuries from St. Damien Hospital to outside facilities.

Fortunately, most of the first responders were trauma surgeons. But they weren't the only specialists who were needed in Haiti. Dr. Ford and Dr. Knudson said pediatricians, obstetricians, and plastic surgeons were in too-short supply. When on a medical mission in an underdeveloped country, Dr. Sakran observed, "I am not only a general surgeon, but I am also an internist, a pediatrician, an obstetrician, and so on."

Dr. Bulger said surgeons and other health care professionals also had to exercise their creative abilities to make supplies that weren't readily available. "When we needed a pediatric cervical collar for a little boy who was hit by a car, we cut

up the foam from one of the supply boxes. When we needed traction weights, we used rubble from the earthquake," she said.

Dr. Huffman recounted the story of a man with a lumbar spine fracture, who was unable to access the field clinic until a week after the earthquake. "Basically, his family had been carrying him around on a sheet the entire time. I made a brace for him using a cardboard box and Ace bandages to stabilize him, and then we were able to put him on a truck and get him down to the DMAT hospital," she said.

Heartbreaking cases

Due to the severity of many of the patients' injuries and the austere working environment, surgeons often had no choice but to perform procedures, such as amputations, that they normally would have done only as a last resort.

"Some people have likened it to Civil War surgery, where you have one chance, one operation, and that operation may mean sacrificing the limb to save the life. That was done in a widespread fashion in Haiti. There just weren't any other options," Dr. Born said.

"I had a two-year-old boy who had his leg crushed and had an open fracture, and by the time he came to us, it was about six days after the earthquake. His leg had been splinted, but he had a compound fracture that was totally infected, and we wound up amputating his leg above the knee," Dr. Born added. "That was probably one of the hardest things I've had to do in nearly 30 years of being a trauma surgeon, not only because of the child's age and the nature of the surgery, but also because under normal circumstances this was an injury that would have been very manageable."

These types of cases profoundly affected other surgeons in Haiti as well. A 14-year-old teenager, who had a severe open tibia/fib fracture that had become infected, left an indelible mark on Dr. Sakran. "He had late-stage tetanus characterized by spasmodic contractions. This was a terrifying situation, not only for us but for the numerous patients lying next to him. All the training, all the equipment, all the determination, and here I was standing next to this young man's gurney with the inability to provide him with a second chance.

He was taken to a quiet, dark room, where we were able to provide him with some comfort” in his final hours of life, Dr. Sakran recalled.

“Many [patients] touched me deeply, like the 23-year-old male crush injury patient who died of rhabdomyolysis, which is preventable with early fasciotomies and dialysis, or the 14-year-old girl who needed an above-knee amputation to save her life, or the two-year-old below-knee amputee sucking on a lollipop,” Dr. Rogers said. “I am haunted by the faces of those who died too young of pulmonary emboli and overwhelming sepsis, and wish I could have done more to ease their suffering and pain.”

A second wave

As the weeks wore on, some surgeons needed to return to their practices in the U.S. A second wave of surgeons and other health care professionals was then deployed. Perhaps not surprisingly, surgeons who participated in this part of the recovery initiative—that is to say, those who were there in early to mid-February—provided care to patients with different types of diseases and conditions. For example, Dr. Knudson began working on the USNS *Comfort* in mid-February. “We were doing things like skin grafts to cover open wounds, flap operations, a few operations for people who had suffered head injuries and spinal cord injuries. We got an occasional patient with a fresh trauma that was not necessarily earthquake-related, but related to some of the violence that goes on after a big disaster like this, as well as some secondary injuries due to buildings that were unstable,” Dr. Knudson said.

In addition, the *Comfort* had become a referral center for patients who had been treated by teams that were leaving. “We were the only place that had ventilators and could operate at night, so we got a lot of referrals from the regional hospitals there for new trauma—people hit by cars, gunshot wounds, and the like. We also saw the same type of acute general surgery emergencies that you would see in a hospital here, a lot of infectious disease, and a lot of pediatric critical care,” Dr. Knudson said.

Some surgeons who had been there in January participated in these second-stage efforts, as well. Dr. Ford returned in mid-February. On



Dr. Campbell examining a victim of the second earthquake.

his second mission, he said, he saw fewer acute trauma injuries due to the simple fact that by that time the earthquake’s victims had either died or been treated for their injuries. His second team was “more engaged in correcting some of the emergent operations that had been performed under austere conditions. The reason they needed to be revised was that many of the incisions had become infected. They had become infected because people were doing operations with dirty instruments in really less than sterile conditions,” Dr. Ford explained.

Rewards

All of the surgeons interviewed for this article agree that the weeks they spent caring for victims of this catastrophe were, in the words of Dr. Huffman, “eye-opening and life-changing.”

The aspect of this activity that many surgeons found particularly remarkable was the opportunity to experience the Haitian culture and spend time with the people.

According to Dr. Shackford, the Haitian people have a strong sense of community and look out for each other. On this mission, “I had a little girl who I operated on. Her name was Sengalla.



U.S. Navy nurse-anesthetist at work in the operating room aboard the USNS *Comfort*.

She was about eight or nine years old, and all of her siblings and her parents were killed in the earthquake. So, she was totally alone,” he said. The parents of the child in the next bed adopted her. “They took her in. They clothed her, they fed her, they took care of her. That’s the way Haitians do things,” he added.

Dr. Huffman saw other examples of how Haitians work together while traveling from tent city to tent city. When they’d first arrive at a site, “We didn’t have exam tables or anything. We’d get out some folding chairs and tell them we needed a place to set up, and they would run and pound some sticks in the ground and put some sheets over them so we’d have shelter. They’d bring us doors to use as tables to examine people on. They helped us to help them,” she said.

“Our [Haitian] volunteers, all of whom had lost their homes, had lost their family members, were sleeping on the ground, came every day wearing clean clothes, shined shoes, wanting to help their fellow Haitians,” she added.

Dr. Rogers was impressed by what he called “the resiliency of the human spirit. Despite incredible suffering and loss, mothers held their children, kids laughed and cried, people prayed, families turned [over] their [bed-ridden] para-

lyzed loved ones, grown men were given sponge baths, and people came to work, despite losing their entire family in the quake,” he said.

These demonstrations of grace under pressure touched Dr. Bulger as well. “They’re patients in a hospital, they’ve had these horrible injuries and amputations, yet they will sing at night. I just don’t think that people who live in a privileged setting like we do would take that type of event as well as they seem to have taken it,” she said.

The surgeons also found the opportunity to work in teams rewarding. “We had an excellent team of dedicated nurses, physicians, and surgeons who all shared similar values about alleviating human suffering.” Dr. Rogers said. “Some were wonderful organizers, and they organized. Some were incredible doers, and they did. Some were skilled communicators, and they communicated. We did whatever was necessary to get the job done.”

When she first arrived in Haiti to participate in this mission, Dr. Campbell and the anesthesiologists she works with on these outreach programs didn’t know who they would end up working with, “but it turned out to be wonderful. It was really a great working situation. We were with people who truly had the heart for what they were doing,” she said.

And the surgeons believe their teams’ efforts will have a lasting impact on the health and well-being of the Haitian people. “There’s no question that I think we’ve made a difference in the lives of many, and that we brought hope to so many [people]. I have to be pleased with what we were able to do and what we accomplished,” Dr. Ford said.

Current situation

At press time, the problems directly related to the earthquake were abating, but new concerns were mounting.

“Obviously, the response to acute injury from the earthquake is done,” Dr. Scalea said in mid-March. “What we’re doing now are skin grafts, reconstructive operations, closures, and a modest amount of community health,” Dr. Scalea said. “We’re following about 700 people as outpatients now, plus whatever walks through the door, and as the word has gotten out, more people show up. We are now

seeing somewhere in the range of 300 patients a day. That's a big emergency department," he said.

"We are seeing both the people on whom we operated, as well as the people who had operations through one of the groups that was there for a week or two, and now [the patients] have no follow-up care," Dr. Scalea added, noting that his team intends to remain in Haiti at least through the fall. "One of the very illuminating things has been seeing a number of the complications that have arisen. One of the things we hope is going to be good about our staying for at least six months is the opportunity to do some long-term follow-up."

Now the focus is on medical care—dealing with tropical diseases, malaria, and so on, Dr. Campbell said. "I think over 300,000 people are going to die as a result of this disaster, because the numbers just keep going up. And without the sanitation, without the proper wound care, without the treatment of regular diseases that are common in Haiti, I just think that's going to be the case," she added.

On April 23, Dr. Campbell returned to the Haitian hospital where she usually provides care on the island, because that facility is now one of the referral sites for earthquake victims needing follow-up care. "We're going back to the mountains, which is where we normally go in April," Dr. Campbell said, before she left for the recent trip, "because the little hospital we go to has been inundated with refugees coming out of Port-au-Prince, and they're overwhelmed. I know there will be surgical needs up there at that time, and I'm taking an OR team with me."

"I think what we're all worried about now is what will happen during the rainy season, because the risk of infection and of widespread infectious disease will be significant due to the living conditions that these people currently have," Dr. Bulger said. "Haiti before the earthquake had extreme poverty and very limited access to health care. Now all of that is 100 times worse. Add to that the homelessness, the tent cities, the lack of food, the lack of potable water, and it becomes clear that in addition to addressing ongoing health care issues, the real need is to focus on the basics—making sure that people have places to live out of the rain, that they have food, that they have water and proper sanitation," she added.



Sengalla in a wheelchair, with Ms. Shackford (left) and Dr. Shackford.



Sengalla, no longer needing a wheelchair.

Long-term commitment

The next step in the U.S.'s efforts to help Haiti get back on its feet with respect to health care is to develop a long-term strategy that will allow Haitian health care professionals to start taking over, Dr. Scalea said.

From a medical standpoint, the primary concern is ensuring that all Haitians have access to quality health care. "That means they need

a massive investment in the health care infrastructure. They need to build more hospitals. I would estimate 75 to 80 percent of the hospital structures have been destroyed,” Dr. Ford said. They also need rehab facilities in every state and to establish a trauma system.

Dr. Ford is playing a role in efforts to develop an organized Haitian health care system. During his second deployment to Haiti, he started working with a nongovernmental organization (NGO), Project Medishare for Haiti, Inc., to try to develop a trauma health system on the island. “This is a project that is supported not only by Project Medishare, but that also is endorsed by the Ministry of Health in Haiti, by the private sector in Haiti, and by other NGOs, including Partners in Health, as well as some leading universities in the U.S., such as the University of Miami and the University of Southern California,” Dr. Ford said. “Our hope is to be able to establish this much-needed trauma system and a trauma, critical care, and rehab hospital in a country that simply does not have anything when it comes to emergency medical service.

“Most of the NGOs that came to Haiti thought that they would intervene during the acute phase and then go home,” Dr. Ford said. “If Project Medishare had done the same thing, then Haiti would have been left with a major void, because Project Medishare is the only place providing trauma and critical care with any modicum of success in the entire country.”

The College intends to be part of the effort to develop the Haitian health care system. “I have the reassurance of the Chair of the Board of Regents, the Chair of the COT, the Executive Committee of the Board of Governors, and the Executive Director, Dr. Hoyt, that they are prepared to support this initiative in any capacity possible. So, that’s quite exciting,” Dr. Ford added.

Furthermore, in February, the College signed a memorandum of agreement with the U.S. Navy, which enabled the ACS to serve as an NGO on board the USNS *Comfort* hospital ship during this disaster, and in any that might occur in the future, Dr. Knudson said. “It’s really important that we’ve opened this door for the College. Now [the military knows] who we are, we’ve signed up. There were over 950 volunteers who signed up on the College’s Web site to go to Haiti. Now

we have a way for them to find places they can go and be useful,” she added.

In addition, Project Medishare is working to move its services into the only hospital left intact in Port-au-Prince, L’Hôpital de La Paix—the Hospital of Peace, Dr. Ford said.

“Hopefully, if there’s any silver lining to this earthquake, it is that there is a consciousness of Haiti in one of its wealthiest and closest neighbors, and that’s the U.S.,” Dr. Shackford said. “When I was down there in 2006, they had a horrible hurricane, and 8,000 people were killed in a town called Gonaïves, and that didn’t even make news in the U.S.”

Dr. Campbell also hopes that people will remain cognizant of how this cataclysmic event has affected the people of Haiti. “I think it is important to keep people aware of the tragedy, because the difficulties are going to continue for an extended period of time, and people get compassion fatigue. You can’t hear about such sadness over and over again—but we can’t just forget these people,” Dr. Campbell said. □