



# TRAINING GLOBAL SURGERY FELLOWS

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by

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Access to surgical care is a necessary public health provision and, in many people's opinion, a basic human right. While access to medical care in resource-poor countries has increased with the global health movement, surgical care has largely been neglected.<sup>1</sup> This article discusses the authors' experiences in developing a global surgery fellowship and delivering surgical care in rural Haiti.

### *Establishing clinics*

Haiti is the poorest country with the worst health and human development statistics in the Western Hemisphere.<sup>2</sup> In the book *Mountains Beyond Mountains*, Tracy Kidder documented the work in Haiti by Paul Farmer, MD, and his colleagues at Partners

Pictured above: Surgeons from around the globe and at all levels work together and have an exchange in surgical education. Haitian attending surgeon Dr. Marie May Louisfils (center) repairs the cleft lip of a young boy while surgery residents from Canada and Haiti, a Cuban nurse anesthetist, and an American global surgery fellow learn and assist. (Haiti map courtesy of the United Nations.)



in Health (PIH), Boston, MA, and its sister organization Zanmi Lasante (ZL), which operates in Haiti.<sup>3</sup> In 1985, PIH/ZL mobilized around basic health needs in the Central Plateau of Haiti. ZL opened a free medical care clinic called Clinique Bon Sauveur, and in 1986 physicians at the facility documented the first known case of AIDS in Haiti's Central Plateau. ZL focused its efforts on HIV prevention and education during the early years of the epidemic, and they offered free health care services to patients in need. Over time, the Clinique evolved into a sociomedical complex offering comprehensive inpatient and outpatient health care. More than 250,000 patient visits occur each year in Cange, which is linked to a network of 12 hospitals and clinics in rural Haiti.<sup>4</sup>

### ***Expanding surgical care***

With growing recognition that these clinics provide high-level medical care, patients with a wide range of surgical diagnoses also travel to these facilities.<sup>5</sup> Some of the conditions patients have are beyond the scope of practice and training for most local surgeons. For example Sara,\* a 63-year-old woman from a remote farming village in Haiti, woke early each morning in the darkness of her small hut. In her usual routine, she stood, leaned over a kerosene lamp, and struck a match. Tragically, the lamp had accidentally been filled the day before with gasoline instead of kerosene. It exploded, and Sara suffered severe burns to her face, arms, and upper body. She was a several-hour walk from the nearest medical clinic and was suffering from life-threatening burns. Had it not been for the care delivered by nurses in a clinic in rural Haiti, Sara likely would have died.<sup>6</sup>

For weeks, Sara teetered on the brink of dying. Despite renal failure, respiratory distress, and extreme pain, she was slowly and literally nursed back to life. The deep burns left massive wounds with raw flesh extending across her upper body. Such was Sara's existence for the next 18 months. She desperately needed specialized surgical care, but unfortunately, these services were unavailable, a theme that is common in poor and rural areas around the world. Unable to care for herself or her family, meaningful life seemed uncertain. In 2009, following rumors of plastic surgeons working in



Sara, upon presentation to Clinique Bon Sauveur in Cange in 2008, with open wounds extending across her upper body and scar contracture of her neck, arm, and hand 18 months after being burned.

rural Haiti as part of a global surgery fellowship, Sara traveled to Cange, a village in central Haiti, for the surgical care she so desperately needed (see photo, this page).

Existing models of medical care have demonstrated that hospitals in poor countries can work in tandem with academic medical centers and visiting physicians to expand access to care. PIH/ZL recognized the growing number of patients requiring surgical care, such as Sara, and in 1996, built an operating room (OR) at the Clinique. Since then, PIH/ZL has built additional ORs (see photo, page 48), and surgeons from around the world have donated time, skills, and equipment while working closely with Haitian surgeons to develop a surgical care system.

\*Name has been changed to protect confidentiality.



Operating room in the PIH/ZL hospital in Boucan Carré, Centre District, Haiti.



As a model of surgical accompaniment, global surgery fellows work closely with local surgeons in places such as Cange, Haiti. From left to right, Dr. Sullivan with Haitian Zanmi general surgeons Dr. Marie May Louisfils, Dr. Lucien Baptiste, and Dr. Josue Augustin.

### ***Expanding global surgery opportunities***

Although global health has become an increasingly recognized field of medicine, surgical care remains largely ignored in many poor countries. Institutes, departments, and programs in global health care are developing at leading medical schools throughout the U.S., but students are usually trained in internal medicine and infectious disease rather than in global surgery.<sup>7</sup> Educational opportunities in the emerging field of global surgery are limited. If overall improvement in global health is to be achieved, both medical and surgical education opportunities must be available.

Inspired by colleagues in internal medicine, an increasing number of surgeons have recognized the need for global surgical care and are taking action. The American College of Surgeons' Operation Giving Back program is one example of global surgery advocacy and provides a gateway for surgeons interested in this area.<sup>8</sup> The Alliance for Surgery and Anesthesia Presence Today is developing a collaborative of surgeons, anesthesiologists, and public health specialists who are advocating for surgery to be a key component of efforts to improve global surgery outreach.<sup>9</sup>

The World Health Organization has partnered with the Ministries of Health, local and international organizations, and academic medical centers to form the Global Initiative for Emergency and Essential Surgical Care (GIEESC).<sup>10</sup> The GIEESC is working to reduce death and disability from vehicular crashes, trauma, burns, falls, pregnancy-related complications, domestic violence, disasters, and other surgical conditions in more than 34 low- and middle-income countries. Medical students, residents, and fellows are also eager to experience and address global surgery needs as part of their education. When surveyed, a majority of U.S. anesthesia, general surgery, and orthopaedic surgery residents express an interest in having a global surgery humanitarian experience during their training.<sup>11-17</sup> Many residents are willing to have such an experience even if it is part of vacation time. Despite interest, few programs offer a structured global surgery opportunity for residents.

### ***Global surgery fellowship***

In 2008, surgeons affiliated with Harvard University teaching hospitals and PIH/ZL founded a global surgery fellowship for surgeons who have completed their training and are interested in dedicating 12 to 24 months as a surgeon in a developing country. The clinical experience is coupled with a curriculum in public health and surgical education.<sup>18</sup> The purpose of the fellowship is to train surgeons to be leaders in promoting surgical care, education, and research pertinent to global surgery in resource-poor regions around the world.

Global surgery fellows work closely with local surgeons and, together, have an exchange in surgical education while learning, teaching, and performing operations ranging from oncologic, pediatric, plastic, burn, obstetric, ophthalmologic, orthopaedic, urologic, and general surgery (see photo, this page). In a given week, these fellows have performed a spectrum




of operations, including release of burn scar contracture, skin cancer resection, pediatric lymphatic malformation resection, facial neurofibromatosis excision, keloid excision, cleft lip repair, palatoplasty, breast reduction, inguinal herniorrhaphy, closure of myelomeningocele, and hydrocelectomy.

Over the course of one year, fellows have performed up to 65 operations for cleft lip and palate. Fellows also expand their operative skill set by helping with such procedures as cesarean section, splenectomy, cholecystectomy, appendectomy, colostomy, exploratory laparotomy, repair of imperforate anus, urogenital repair, hysterectomy, mastectomy, hand and extremity repair, amputation, and fracture fixation.

In the traditional model of an academic medical center, fellows not only provide surgical care, but can add to nascent research areas, such as exploring the use of implementation science in surgical delivery; enhancing educational curricula for local surgery residents, medical students, and other health care providers; strengthening public health systems; and building an infrastructure for preventative and trauma care. In the last two years, the fellowship has expanded to include clinical and research opportunities with PIH in Rwanda.

As for Sara, with this model of surgical partnership as exhibited by PIH/ZL, members of the collaborative worked with Haitian surgeons to provide the surgical care she desperately needed. Using skin grafts, the physicians treated her open wounds and scars and restored movement to her neck. For the first time in almost two years, Sara is now free of dressings, wound care, and excruciating pain. She can independently care for herself and, hopefully, now has a long and bright future as a member of her family and community. Additionally, through this experience, our Haitian colleagues have learned more about caring for patients with burns and those in need of plastic surgery.

Sara is just one patient who has suffered from the burden of untreated surgical disease and the need for essential surgical care in Haiti and other resource-poor countries around the globe. Through our partnership between PIH/ZL, the global surgery fellowship provides young surgeons with an opportunity to become involved in the global health movement, and it serves as a model for collaboration between hospitals in resource-poor countries and academic medical centers. 

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Mesi anpil (thank you very much) to our patients and colleagues in Haiti.

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