

A dream of sustainable surgery in Uganda

December 19 2018, by Kathy Katella



In Uganda, one surgery can not only save the life of an infant or child, it also can extend it, providing a better quality of life. This can have a dramatic impact not only on the patient, but on the patient's friends and family as well. Credit: Yale University

Nasser Kakembo, MD, is a pediatric surgeon—one of just four among the 200 surgeons who serve more than 40 million people in Uganda. He gets up at 5 a.m. every weekday and drives 40 minutes to the hospital in Kampala, the capital city.

He recently treated a young orphan who had been born with a vestibular fistula (an abnormal connection between the female genitalia and rectum). In the U.S., doctors would have repaired this in infancy. But this girl was 12 years old and had never seen a surgeon. Dr. Kakembo performed a temporary colostomy, a procedure to temporarily divert the large intestine so that she could pass stool into a bag outside of her abdomen, then later performed a more complex [surgery](#) to correct the vestibular fistula.

"This is a child who had never gone to school," Dr. Kakembo says. He didn't know her parents' story, but he says Ugandans have such a negative perception of colostomies that families may split up when a child has one. Fortunately, the mother of another hospitalized child took an interest in the girl and taught her to sew. "So, now this girl is a tailor. She has a livelihood. She came to the hospital with a medical problem that we were able to fix, and now she is living her life," Dr. Kakembo says.

But the problem is that "there are so many stories like this," he says. "And many patients are never treated or even diagnosed."

Helping surgeons help themselves

This is a situation Yale Medicine pediatric surgeon Doruk Ozgediz, MD, MSc, wants to fix. An assistant professor at Yale School of Medicine, Dr. Ozgediz has a master's degree in public health in developing countries and has been regularly visiting Uganda for 15 years.

Uganda is a country known for its lush forests and misty mountains. It was once described by Winston Churchill as the "pearl of Africa." But many of its people don't get proper medical care. When Dr. Ozgediz first traveled there in 2003, most visiting doctors were helping to manage such problems as HIV and malaria. "Little had been done to tackle

surgical diseases," he says. "There were major challenges as far as infrastructure, poverty, and just human resources, not enough workforce—not enough of just about everything. The question was, what could we do?"

Dr. Ozgediz was especially drawn to caring for the children, partly because 50 percent of the population in Uganda is 14 and younger, and 85 percent of children in low-income countries are likely to need surgery by age 15, he says.

Although there is no fee for surgery in Uganda, patients must pay for the hospital stay, the imaging tests, even the bed linens. Some sell off cattle—and sometimes their house—to pay for needed care, Dr. Kakembo says. The shortage of doctors in Uganda means that many patients who do get surgery aren't getting it from specialists trained to treat their particular type of problem. It's not uncommon for a woman with a gynecologic problem to seek help from the only doctor available to her, even if that doctor is a pediatrician, Dr. Kakembo says.

In response to this, many Yale Medicine doctors travel on medical missions to provide care for people who wouldn't be treated otherwise. But Dr. Ozgediz envisioned Uganda as a place that, with some help, could provide its own sustainable surgical care. (This perspective mirrors a recent mandate from the World Health Organization to make essential surgical care available in all countries.) So, while he has helped perform thousands of surgeries there, he prefers teaching skills to Ugandan surgeons and advocating to increase local capacity.

With that in mind, in 2006 Dr. Ozgediz co-founded the nonprofit Global Partners in Anesthesia and Surgery (GPAS). It is a multidisciplinary collaboration focused on increasing surgical care capacity in resource-poor settings with projects to strengthen workforce and infrastructure to address the surgical disease locally. More recently, GPAS partnered with

a Scottish charity called the Archie Foundation (now KIDS OR), which provided the country with two fully equipped operating rooms (Dr. Ozgediz led research to evaluate the impact of those operating rooms). He also lived in Uganda in 2007 and 2008, working full-time as a visiting surgeon in Mulago Hospital in Kampala. Now, he visits the country as often as four times a year, for two- to four-week stretches, to instruct the new pediatric surgery fellows, in addition to general surgery trainees, in both classroom and clinical settings. "Once they are trained, each new surgeon will do 700 to 1,000 operations a year, many of them life-saving operations, and more children will have access to surgical care," Dr. Ozgediz says.

Dr. Ozgediz says he has built long-term relationships with Ugandan surgeons and like-minded colleagues globally, and worked with local medical teams both in Kampala and in rural areas that are often hours outside the city. The results are promising: One GPAS project helped triple the number of surgical trainees in the country from 15 to 45 (all remained in the country after training). And instead of one pediatric surgeon in the country, there are now four.

Adding an endocrine specialty

Three years ago, Tobias Carling, MD, Ph.D., through connections with Dr. Ozgediz, started to regularly travel to Uganda, having heard there was a need to increase capacity for endocrine surgical care. Dr. Carling is chief of Yale Medicine Endocrine Surgery and director of endocrine cancer care at Smilow Cancer Hospital. "Growing up in Sweden, and practicing in the United States, I had so many opportunities," Dr. Carling says. "I wanted to get involved in some way. And then this presented itself."

In addition to performing surgeries himself, Dr. Carling trains surgical residents and fellows in Uganda in endocrine surgery, and tracks surgical

outcomes. "Once I teach the residents how the operation can be done the safe way, they'll have a career for 40 years and be able to train the next generation," he says.

He has traveled six hours from Kampala to small hospital "camps" in rural areas, sometimes treating patients who have walked two days to get there. Dr. Carling sees many people with goiter, a disease caused by an enlarged thyroid compressing the trachea, affecting breathing and swallowing, that he treats with a subtotal thyroidectomy.

One of his most impactful experiences has been watching doctors do successful surgeries with limited tools and supplies. "It's night and day as far as resources. That blows your mind a little bit—how much we throw away in the U.S. because things are made to be used only once, and they use them repeatedly because it's all they have," he says. He once had to use a World War II-era anesthesia machine to help a patient he was treating. Even so, he says, "The patients are similar, the anatomy and the difficulty of the operation are the same, and, what's more, we have proven that we can have excellent outcomes."

Making the most of limited resources

Dr. Kakembo would agree, with at least one difference: There are many more patients in Uganda and limited supplies and equipment.

He told his story while sitting in an office toward the end of a weeklong visit to Yale in October. It was the second visit Dr. Ozgediz had arranged for Dr. Kakembo so that he could speak at Yale, learn from Yale's pediatric surgeons, and attend conferences in this country. (Yale also has hosted medical students and trainees from Uganda, recently including an obstetrician who plans to start a maternal-fetal pediatric program in Uganda.)

He says he performed well enough in his early school years to be accepted to medical school, where he found a mentor who got him interested in surgery. "He gave me the passion to love the discipline. I loved the art of fixing tissue," Dr. Kakembo says. He was a surgical resident when he first met Dr. Ozgediz in 2012. Like many of his young peers, he had considered leaving the country to practice surgery in a place where he could make more money and live an easier life. "But I didn't have the means to leave then, so I stayed," he says. "I don't think I'll consider leaving my country now. The need is too great. We make a difference every day."

Dr. Kakembo starts each day by checking on patients who came in during the night, often after they've been in a car crash—roads are dangerous and accidents are frequent. Later, if it's a surgery day, he goes to the operating room, where he performs surgery—including many highly complicated procedures—well into the evening. In his most challenging weeks, if he is working in a hospital camp, he might perform more than 100 surgeries. Recently, a mother traveled three hours by bus so that he could help her baby, who had a large tumor growing out of his back. Another baby's intestines were growing outside of its body—a condition called gastroschisis that is fatal if left untreated.

"For the surgeon, it's a very demanding job, especially when it comes to emergencies. There are so many emergencies," Dr. Kakembo says. "That means we end up having a backlog of elective cases that are not tended to."

But his greatest concern is for the patients he doesn't see, including children who never see a doctor for devastating anomalies that should be corrected in the first year of life, or who see a doctor when it is almost too late.

"I think we are desensitized," Dr. Kakembo says. "But it's the

circumstances. There are so many patients. To advocate for them, we need to do an even better job of quantifying our unmet needs through clinical research."

The rewards flow both ways

The help provided by Yale Medicine doctors can seem a mere drop in the bucket in the context of so much need. But Dr. Ozgediz and Dr. Carling know that every little bit helps and say that when our doctors work in Uganda, their view of what's possible expands. Their perspective changes. They see that surgeons there, who have found ways to do more with limited resources, can do an operation in Uganda for \$15. A medical student might learn how to fix an oxygen tank for a patient if he or she is the only one available to do it.

"American trainees appreciate the resources in the U.S. better when they can see what it is like on the other side," Dr. Ozgediz says. "Many come back forever changed—as clinicians and as human beings."

"It has made me a bit more patient," Dr. Carling says. "If I'm in the U.S., and something is not functioning perfectly or there is a delay, I think, well, at least we have lights in the operating room, at least we have functioning electricity. We are so fortunate when it comes to the resources we have here."

Both doctors say their experience in Uganda has made them better listeners when they are consulting with patients at Yale.

Meanwhile, as Dr. Kakembo learns more surgical skills and the capacity to provide surgery in Uganda grows, he wants to educate its citizens about what health care can do for them. "I want patients to come to us early, so we can provide the best treatment for them," he says.

He is grateful to his American colleagues for helping him advance as a [pediatric surgeon](#), and is hopeful for the future. "Their presence is being felt here," says Dr. Kakembo. "This has really made a difference."

Provided by Yale University

Citation: A dream of sustainable surgery in Uganda (2018, December 19) retrieved 8 May 2024 from <https://medicalxpress.com/news/2018-12-sustainable-surgery-uganda.html>

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