Last fall, Todd Kingdom, MD, found himself at an operating table performing separate surgeries on young children.

An 11-year-old boy had a mucocele, a build-up of mucous in the nasal cavity that had grown so large, Kingdom said, that it acted like a tumor. The pressure of the mass had damaged the boy’s vision in one eye.

A seven-year-old girl suffered from an encephalocele. A congenital hole had allowed cerebrospinal fluid and a portion of brain to breach the bony barrier between the brain and the sinus passage at the base of the skull.

“There was brain where it shouldn’t be, filling her nasal passage,” Kingdom said.

In both cases, Kingdom, who specializes in sinus surgery at University of Colorado Hospital, repaired the damage endoscopically. He threaded a thin rod fitted with a camera and light through the nose and into the nasal cavity. He then used a microdebrider – essentially a high-powered shaver – to remove tissue. He pierced the mass in the boy’s nasal cavity and allowed it to drain. He removed the brain material and fluid from the girl’s sinus, then plugged the hole.

In the United States, the two surgeries wouldn’t have caused much of a splash. Both patients probably would have been out of the hospital 36 hours after the procedures, Kingdom said. But they happened at Kenyatta National Hospital in Nairobi, Kenya, before a rapt group of attending physicians and residents who had never seen this kind of work before and wanted to learn how to treat what for them were inoperable problems.

They had flocked to the hospital from posts at the University of Nairobi, rural areas of Kenya and surrounding East African countries to soak up the instruction of Kingdom and fellow sinus surgeon Richard Orlandi, MD, from the University of Utah. Kingdom and Orlandi were donating their time and expertise to help providers in these countries build the skills necessary to bridge a yawning gap of unmet medical need.

Numbers game. There are roughly 10,000 ear, nose and throat (ENT) specialists in the United States, Kingdom said – a relatively small number compared with other disciplines. By contrast, there are but a relative handful of ENTs to serve Kenya’s population of 44 million, and nearly all of them are in Nairobi. The most complex cases often go untreated.

As a result of the provider shortfall, the country lacks the critical mass necessary to build a sustainable medical teaching system that is taken for granted in the West. The providers clustered...
about Kingdom and Orlandi in the operating rooms were therefore hungry to absorb skills they could pass on to others. A couple of days observing the American surgeons created “an exponential explosion of knowledge that we don’t appreciate in this country,” Kingdom said.

The idea for the Kenyan visit began several years ago after a faculty friend at UCH introduced Kingdom to a visiting ENT from Nairobi who had come to the hospital to watch sinus surgeries. After several days observing procedures, the Kenyan physician said he’d like to find a way to bring the techniques he’d observed to East Africa.

Kingdom filed that away and stayed in touch with his Kenyan colleague. Their correspondence eventually led the Kenyan Ear Nose and Throat Society to ask Kingdom if he would be willing to put together a training visit for attending physicians and residents from throughout the region. Kingdom said he was on board and later recruited Orlandi to accompany him on the October 2013 trip to Nairobi.

Information flow. The two assembled a full day of lectures at Kenyatta, then spent the next two days in the ORs handling cases picked by the hospital’s faculty, some of whom served as surgical assistants. Groups of 25 to 30 surrounded the tables, watching the American surgeons’ techniques.

The experience was an eye opener for Kingdom. For example, the microdebriders, donated by Medtronic for the procedures, represented routine equipment by U.S. standards, but they were revelations for the African physicians, who peppered Kingdom and Orlandi with questions about using them.

“They were extremely grateful to have access to anything we could offer,” Kingdom said. “It’s fabulous technology if it is used correctly, but if not it’s dangerous. We showed them something that looks easy, but with a reminder there is a learning curve. They were sponges for knowledge, from the residents to the attendings.”

New view. Nairobi, a bustling city of 3.4 million that spans the first and third worlds, was a far cry from Minneapolis, where Kingdom grew up as a self-described science and engineering guy. He earned his undergraduate degree in engineering at CU Boulder and his medical degree at Emory University in Atlanta, where a “good mentor” got him interested in otolaryngology. He completed his residency, specializing in otolaryngology, at the University of California San Francisco.
He returned to Emory for six years, then “found his way back” to the University of Colorado School of Medicine in 2002, to continue his surgical work in rhinology – treatment of disorders of the nose and sinuses.

He brought all that experience to bear in the Kenyatta OR, a comparatively unsophisticated environment for a specialist raised in the high-tech world of American medicine.

“It was humbling,” he said. “They were incredibly gracious and grateful. I took away plenty from them and gained a much better understanding of their culture.”

“We have to go in with a certain comfort level,” Kingdom said. Before going over, he spoke with colleagues who had made mission trips to underserved areas to glean what insights he could. “They said it will be different and to be prepared for that. It won’t be Denver or Salt Lake City. If you can’t be flexible, you have no business being there.”

The visit required flexibility from both sides, Kingdom discovered as he prepared to repair the encephalocele in the seven-year-old girl, a Somalian who had traveled more than 500 miles with her family for help. No one in East Africa was prepared to take her case. Kingdom went in to talk to the girl before she was put to sleep for the procedure. As he approached her, he thought about the situation from the girl’s perspective and was struck by her reaction.

“She saw perhaps her first white person coming at her,” he said. “It must have been terrifying, but she was calm and stoic. Her reaction put me at ease.”

In the end, Kingdom said he gained much from the warm and welcoming people. Many were “without two nickels to rub together,” but had a strong commitment to improving their country.