

PROFESSIONALISM

Global Neurology: The Launch of the First Neurology Training Program in Zambia

BY OLGA RUKOVETS

ARTICLE IN BRIEF

 The first neurology training in Zambia launched in Zambia, a collaborative initiative brought about by multiple academic medical centers in the US and the National Institute of Neurological Disorders and Stroke.

Until recently, Zambia — a country with roughly 16 million people — did not have a single locally-trained, full-time neurologist. As of October, thanks to a multi-institutional international effort and the launch of the first neurology training program in the country, there is hope for improving that ratio for the foreseeable future.

The initiative was spearheaded by Omar Siddiqi, MD, MPH, an assistant professor of neurology at Beth Israel Deaconess Medical Center and global health researcher, who initially came to Zambia in 2005 during his neurology residency with the help of Gretchen Birbeck, MD, MPH, who already had a long-standing research program in the country. At that time, Igor Koralnik, MD, now the chairperson of the department of neurological sciences and head of the section of neuroinfectious diseases at Rush University Medical Center, became Dr. Siddiqi's mentor.

The experience in Zambia left a lasting impression on Dr. Siddiqi. Together



FIVE ZAMBIA neurology trainees are in the front along with US neurologists and Zambian collaborators. The US Ambassador Daniel Foote (tallest, in second row) spoke at the neurology symposium that was held to celebrate the new trainees and launch of the program.

with Dr. Koralnik, he began to write research grants that would allow him to work in at the University Teaching Hospital in Lusaka, Zambia, full time. In 2010, he moved to Zambia with his wife and two young children, and in addition to conducting research, began seeing

Dr. Siddiqi and his colleagues understood that the "game changer" would have to be a local neurology training program that would ensure a consistent output of Zambian neurologists, who would continue to train future generations.

'It is really hard to overstate the long-term impact this post graduate neurology training program will have on Zambia and the region.'

patients in his free time. "The disease burden was really overwhelming. I could see patients 24 hours a day and still not come close to addressing the disease burden. It was like a drop in the ocean."

The new program is "the culmination of about 13 years of work. It was made possible by the fact that there was one neurologist in Zambia already, Dr. Masharip Atadzhyanov, who came from

the former Soviet Union and who had been there for a while — and the connection that we had with him through Gretchen Birbeck," Dr. Koralnik said. Dr. Birbeck, Rykenboer professor of neurology and research director for the Strong Epilepsy Center at the University of Rochester Medical Center, has been involved in the work in Zambia for many years.

THE PIECES COME TOGETHER

In 2015, Dr. Siddiqi had discussed the idea for the training program with Drs. Koralnik and Birbeck and began fundraising efforts. Then, when he met Deanna Saylor, MD, assistant professor of neurology and director of the Hopkins Global Neurology Program at Johns Hopkins University School of Medicine, everything started to come together. Dr. Saylor was interested in writing the curriculum with Dr. Siddiqi and became the program's training director.

"I tried to make the curriculum a blend of traditional Zambian post-graduate programs and American post-graduate training programs," she told *Neurology Today*. For example, she noted that the training is considered a master's degree in Zambia, requiring a dissertation and written examinations, "so there had to be a more structured, didactic curriculum."

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Neurology Training Program, Zambia

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In her own training, Dr. Saylor remembers there being a lot of hesitation before starting empiric treatment without a confirmed diagnosis. "Here, we just don't get a confirmed diagnosis much of the time. That's where I think the emphasis on clinical reasoning really comes into the training program. You really have to use your diagnostic skills, your history and exam, and the limited investigations that you have available to narrow down the differential. Then you make an educated guess about what on your differential is most likely, and then start treating empirically to try to help the patient. We then follow them closely — and if they're not responding to our initial line of treatment, we reconsider and try a different line of treatment."

Dr. Saylor received a Fulbright Scholar Award from the US Department of State and was able to move to Zambia with her husband and two children full time in February 2018.

On the logistical side, when Zambian residents are trained, they are employed by the Ministry of Health and the Ministry pays their salary, Dr. Siddiqi explained. So, he and colleagues offered to provide specialty neurology training, as long as the Ministry continued to pay the trainees' salaries during the two-year program. The teaching neurologists would come on their own dime. "We told the Ministry, 'Then, you'll have five neurologists — two pediatric and three adult.' And they agreed."

In October 2018, finally, there was cause for celebration. The neurology residency program was officially launched at a Neurosciences Symposium at UTH in Lusaka. Daniel Foote, the US ambassador in Zambia, gave the keynote address. "We have a community and a department," Dr. Siddiqi said. In the past, neurology residents would come through for a month and they'd really make a huge difference, but it wasn't sustained, he continued. "Now, we have this service and neurology patients are being seen every day and they are being followed up. They have advocates who are within the system who can speak the same language, so it is just a whole other level," he said. This is all possible, he said, thanks to multiple academic institutions in the US, including Harvard, Johns Hopkins, University of Rochester, University, Michigan State, and a number of others, as well as research grant support from the US Government and the National Institute of Neurological Disorders and Stroke.

"It is really hard to overstate the long-term impact this post graduate



US neurologists who have collaborated on work in Zambia and will contribute to the training program (left to right): Dr. Igor Koralnik (Rush University); Dr. David Bearden (University of Rochester School of Medicine and Dentistry); Dr. Michelle Kvalsund (Michigan State University); Dr. Deanna Saylor (Johns Hopkins); and Dr. Omar Siddiqi (Harvard Medical School).

neurology training program will have on Zambia and the region," Dr. Birbeck said. "The care for adults and children with neurological disorders will improve at the teaching hospital even within the year. But I think we can also expect a ripple effect whereby the neurology training program's impact on medical students and other physicians in training will raise the bar nationally to optimize care well outside of the academic medical center."

THE DISEASE BURDEN

Clearly, the stakes are high. "There is a huge unmet need in Zambia for every aspect of neurology — communicable and noncommunicable disease," Dr. Koralnik told *Neurology Today*.

There's a tremendous problem, for example, with blood pressure and very high rates of hemorrhagic stroke, the neurologists noted, in part because the diet in Zambia is very high in salt. This is one area where local neurologists, who know the dietary practices firsthand, can really make a difference in teaching patients about prevention. The clinicians also reported a lot of neurologic complications of HIV, such as meningitis, encephalitis, neuropathy, as well as diseases related to malnutrition, cerebral malaria, epilepsy, and other conditions that have to do with the resource-limited setting.

Other unique issues arise when treating patients, Dr. Siddiqi added, because of a belief in witchcraft and the stigma that exists around certain conditions like epilepsy. In Tonga, one local dialect, he said, "the term for epilepsy translates roughly to 'the disease that shouldn't be spoken about in front of children,' so there are certainly a number of educational efforts that need to accompany clinical care."

There is also a lot of fear around lumbar puncture, both Dr. Koralnik and Dr. Siddiqi pointed out. Often

patients who have come to the hospital too late or are already too sick to respond to treatment will die after a lumbar puncture, so the association has misled many individuals to equate the two.

LOOKING AHEAD

"We've opened the didactic sessions to the internal medicine residents, and a lot of them have been attending our neurology educational sessions too. So even though we're only training five neurologists right now, I think that we're improving the baseline neurological knowledge among a lot of different health care providers," Dr. Saylor said. The bulk of neurological care is still going to come from non-neurologists in Zambia in the near future because of sheer numbers, she added, so this is already making a difference.

The long-term goal of the program, Dr. Koralnik said, "is to keep doing this every year, so every year you need to have more people who are selected in the program. In order to continue to do that, you need to have educators. So the challenge for us is to keep everybody funded. Dr. Saylor has also been able to line up other faculty from the US and Europe who are donating their time to be part of the teachers for the Zambian neurology students."

"We're very enthusiastic about the future," he said. "There's a tremendous amount of energy that's been put into this, and it's a celebration of many years of hard work to get to the point where we're starting to train. It's something very unique to be able to train the first group of neurology trainees in a country like this," said Dr. Koralnik.

In-country training should always be the goal of a global neurology program, Dr. Siddiqi said. "If it's not your goal, then the program is so vulnerable to when you leave. If you leave and nothing is left behind, you really haven't

accomplished what I think everyone wants, which is something to be sustained," Dr. Siddiqi said.

"By engaging Zambia's best and brightest to undertake careers in the neurosciences, neurology as a discipline will also undoubtedly benefit," Dr. Birbeck said. "Well-trained African neurologists' future education, advocacy and research contributions will be critical in assuring that neurologic disorders are prioritized appropriately globally." In addition, Drs. Koralnik, Siddiqi, and colleagues are also training the first Zambian neuroscientists, who presented their ongoing collaborative research projects at the Neurosciences Symposium in Lusaka. Dr. Siddiqi said that with every neurologist who comes to Zambia to contribute their expertise, there is so much gratification, "because it really is distilled down to the clinical care and teaching and what everyone really loved when they went into the field. In some ways, there's not enough paperwork — I can't believe I'm saying that. There's not enough documentation, but as a result of that I really think it's the antidote to burnout....I'm exhilarated every day." •

LINK UP FOR MORE INFORMATION:

- To find out more about the work in Zambia or to donate to the program, visit <https://www.neurologyz.com>

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Canada

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San Francisco, CA