

Mission in Tanzania

2016 Update, *From Dr. Roger Härtl*

In April, Dr. Härtl led a team of 14 healthcare professionals—neurosurgeons, neurointensivists, neuro-ICU nurses, anesthesiologists, medical students, and a nutritionist—to Tanzania for the annual training mission. These providers came from around the world to participate in a weeklong stay that included classroom training, training in surgical patient selection, and hands-on training in the operating room.

Dr. Härtl has been leading these trips since 2008, bringing new skills to health care providers and new hope to patients. In 2014 he added a Neurotrauma Training Course, teaching critical skills to doctors and nurses in a nation where neurotrauma is a leading cause of death and disability. This year the third annual course—conducted in partnership with the Muhimbili Orthopedic and Neurosurgical Institute in the Tanzanian capital, Dar es Salaam—covered topics that ranged from correctly assessing and managing traumatic brain and spinal injury to correctly identifying indications for surgical intervention. Nearly 100 participants attended, and organizers were honored to have the newly appointed Tanzanian Minister of Health, Ummly Ally Mwalimu, present in recognition of this international collaboration.



Dr. Härtl with Dr. Emmanuel Saguda (center, background), the head neurosurgeon at Buganda, making ward rounds for spinal cases with the team.

Dr. Stieg Teaches Complex Brain Tumor Surgical Skills



Dr. Philip Stieg, who has participated in several of the Tanzania mission trips, arrived in Dar es Salaam on Wednesday to oversee brain surgeries at Muhimbili Orthopedic and Neurosurgical Institute. In this photo, Dr. Stieg leads the surgical team in performing a complex brain tumor surgery on a young man. Complicated surgeries like this one are hampered by the lack of advanced tools and facilities in the hospital, but Dr. Stieg's goal is to teach local surgeons how to achieve good outcomes using the resources they have available.

Photographs by André Liohn

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Left: Dr. Maria Santos and a Tanzanian anesthetist prepare a child with Dandy-Walker syndrome and hydrocephalus for an endoscopic third ventriculostomy. Above: A four-month-old with hydrocephalus and a large choroid plexus papilloma is readied for an endoscopic exploration, biopsy, and shunt. Both procedures were successfully performed using a new endoscope donated to the hospital by Weill Cornell.

After the conference the team moved to Weill Bugando Hospital in Mwanza, in the northern rural region of Tanzania, where they spent a day with local staff seeing patients and identifying possible candidates for surgery. Visiting surgeons made rounds in the hospital neuro wards and neuro ICU to teach local providers how to care for their patients and identify indications for surgery.

The team then moved into the operating room for three days of hands-on training. Visiting neurosurgeons Roger Härtl, Karol Budohoski, and Karsten Schöller oversaw two cervical laminectomy and fusion cases and one brain tumor resection,



Left: The waiting rooms at Bugando Medical Center are always filled with anxious patients. Here, mothers wait for doctors to see their infants, many of whom suffer from untreated hydrocephalus. Right: Dr. Karsten Schöller (right), with Dr. Isidor Ngayomela, positioning a Mayfield clamp onto a patient before cervical spine surgery. The table had to be modified and drilled by hand with the help of Dr. Maria Santos in order to accommodate this positioning device as it simply had not been used before this.

teaching best practices to the local surgical teams. Pediatric neurosurgeon Maria Santos, a former Weill Cornell fellow who is now living and working in Tanzania on a one-year assignment funded by the Weill Cornell project, led one pediatric intraventricular tumor case and one pediatric hydrocephalus case, overseeing local surgeons (including Dr. Isidor Ngayomela, who recently finished a three-month fellowship at Weill Cornell as part of the ongoing training program).

All surgeries were successful, with no immediate postoperative complications. Several members of the international team stayed for an additional week to monitor and follow up on these patients, all of whom are expected to make full recoveries.

Neuro ICU nurse Karen March is a veteran of the Neurosurgical Mission in Tanzania, with eight consecutive years of participation. The nursing staff is always excited for her arrival each year, and this year was no different. As the surgeons were training their local counterparts in surgical procedures, March was at work furthering the education and training of the staff in the ICU. Improved nursing care before and after neurosurgical procedures is a vital part of the training mission and is critical to providing quality patient care.

At the same time, nutritionist Alissa Rumsey was working hard to implement a new weight-based feeding protocol using the very limited resources of the ICU. Patients are typically tube-fed a porridge that does not meet their caloric or nutritive needs, and Rumsey spent time teaching nutritional management to the team to enhance patient care.

Anesthesiology is also a vital part of patient care, and Drs. Kopman, Lennon, and Grivoyannis were invaluable in helping train local nurse anesthetists to provide the best care possible given the older equipment available in the hospital.



An ICU nurse at Bugando Medical Center administers the standard porridge fed to ICU patients. The porridge is typically high in carbohydrates but contains very little necessary fats and proteins. Nutritionist Alissa Rumsey worked with hospital staff to adjust the feeding protocol so that it is tailored to a patient's weight and age. Alissa is also seeking sustainable alternatives to the porridge in order to better address the nutritive demands of patients in the ICU, which is a critical, controllable factor in their prognosis.

How can you help:

All gifts are 100% tax-deductible. There are two ways to make a monetary contribution:

By check: Make check payable to Weill Cornell Medical College and note Mission in Tanzania in the memo area.

Please mail your check to:

Weill Cornell Brain and Spine Center
c/o Ana Ignat, Department Administrator
525 East 68th Street, Box 99
New York, NY 10065

By credit card: Please visit our website:

weillcornellbrainandspine.org/ways-give and make a donation via credit card by clicking on the "Donate Now" button.

Your contribution will be used for:

- Data collection of Neurosurgery outcomes at Bugando Medical Centre. We support a salary for a data collection person and the maintenance of the database.
- Support of Fellowships of Tanzanian MDs to Weill Cornell Brain & Spine Center.
- Support of Neurosurgery Courses at Bugando / Tanzania: For example, we may support travel of African MDs to the courses in Tanzania, support acquisition of cadavers for practical courses, cover costs for meeting venues.
- We DO NOT use your contribution to support travel of any U.S. surgeons to Tanzania.
- We DO NOT use your contribution to purchase any medical supplies or equipment. We may, however, use it to fund a container to ship urgently needed equipment to Tanzania (for example, an operating microscope).

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Training in TBI Management

Traumatic brain injuries are a leading cause of death and disability in a nation with widespread violence and an extremely weak transportation system—inferior roads and a lack of safety features in vehicles make traumatic injuries common. Dr. Hal Mangat worked on TBI training with the hospital staff, giving lectures in neurology, conducting and reviewing TBI management in the ICU, implementing a new TBI management protocol specifically adapted to the current hospital resources, and holding several mentorship meetings with junior faculty who will conduct a study on epilepsy management.

An x-ray (right) reveals an all-too-common traumatic injury: This patient has shotgun wounds to the face and brain. The patient survived, but lost vision in both eyes. On our Tanzanian mission trips, Dr. Hal Mangat (below, in checked shirt in back row) spends time training his students in TBI management.



ABOUT THE WEILL CORNELL NEUROSURGERY PROGRAM IN TANZANIA

The Neurosurgical Mission in Tanzania, now in its ninth year, is conducted in collaboration with the Foundation for International Education in Neurological Surgery (FIENS) and consists of several components:

1. Our multidisciplinary teams of surgeons, anesthesiologists, nurses, and biomedical engineers train local health care providers to deliver basic neurosurgical care using locally available equipment and resources. We are doing “hands-on” training of doctors in Tanzania, empowering them with a high level of expertise in the management of neurosurgical disorders and neurosurgical procedures (Wait and Härtl 2010; Mitchell 2013). Providing the highest level of surgical training to these eager, talented surgeons impacts every other level of care — nursing, anesthesia, intensive care treatment, and general ward care. Setting the bar high encourages a positive response and team effort involving all areas.
2. Promising African surgeons are selected for short-term observational fellowships at Weill Cornell Medical College in New York. The purpose of this fellowship is to provide motivated surgeons firsthand experience with high-level surgical care. This also greatly facilitates the communication between the Weill Cornell team and the Bugando surgeons once the surgeon has returned to Tanzania.
3. Every year a neurosurgery meeting is organized with international faculty in East Africa that combines lectures, practical workshops, and even live surgeries (Kahamba 2011). Surgeons and nurses from many African countries participate.
4. Weekly conference calls and Skype conferences are held between the Weill Cornell team and their colleagues at Bugando and MOI to discuss challenging cases, patient management, and ongoing research.
5. An IRB-approved database for traumatic brain and spinal injury has been implemented at Bugando and MOI that monitors patient care and ensures quality. This and previous projects have led to several publications in peer-reviewed journals (Winkler 2010; Maier 2014).
6. Each year we fund one European or North American neurosurgeon to live and work in Tanzania for 12 months. This year’s fellow is Dr. Maria Santos, a former fellow in pediatric neurosurgery at Weill Cornell Medicine under Dr. Mark Souweidane.



Patients overlooking the view of lake Victoria and the town of Mwanza below. All of their clothes must be washed by hand and hung out to dry on the balcony.

Dr. Härtl hopes that these efforts will over time show that the program improves patient outcomes and can serve as a model for other hospitals and programs.

For more information please see our Facebook page:

<https://www.facebook.com/pages/Tanzania-Neurosurgery-Project/126883720713121>