

Neurosurgery Education and Development Foundation

Three continents, four nations, five cities, three languages were represented, but one common goal united a volunteer team of intensive care nurses, surgical nurses, an anesthesiologist, and neurosurgeons as they inaugurated the Neurosurgical Education and Development (NED) Institute of the Mnazi Mmoja Hospital in Zanzibar, Tanzania on Monday, November 17, 2014.

During the subsequent week, a total of 23 neurosurgical and 15 pain management procedures were performed, more than 100 patients were seen in the free clinic, and over 30 didactic lecture sessions were held.

Volunteer personnel included Drs. Jose Piquer and Maite Bovaira of Valencia, Spain, Moody Qureshi and Peter Wanyoike of Nairobi, Kenya, and Armond Levy of St. Louis, MO, USA. Nursing staff included Demelsa Martinez, Pilar Chisbert, Amparo Molina, and Nuria Ballo of Valencia; Christine Wanja, Gladys Mahugu Millian Muchai, Linet Mugambi, and Joyce Lang'at of Nairobi.

A significant focus of neurosurgical care in East Africa centers upon pediatric neurosurgery, due to the prevalence there of hydrocephalus and spina bifida; accordingly, roughly half of NED's first week of cases were for children with these disorder, but a variety of complex adult neurosurgical cases were performed as well, including those for brain tumors, brain and spine trauma, and degenerative spine disease. The NED foundation, based in Valencia, Spain is a charitable organization founded by Drs. Piquer and Tony Gomez of Valencia, Dr. Qureshi of Nairobi, and Dr. Paul Young of St. Louis.

NED was conceived in order to provide an organized outlet for volunteer neurosurgical missions to East Africa, where there exists only one neurosurgeon for each 2 to 8 million people, varying per country. Drs. Young and Qureshi are the Honorary President and Vice-President, respectively, of the foundation.

A number of different locations were investigated since 2009, and ultimately the Mnazi Mmoja Hospital was selected in part because of the absence of local neurosurgical care for its nearly 2 million residents. The foundation independently raised funds and, in cooperation with the existing hospital and the government of Zanzibar, erected a freestanding, three-story building on the campus of Mnazi Mmoja for the care of neurosurgical patients. The facility contains two operating theaters, an intensive care unit, male and female patient wards, a conference center, and clinic space.

The stated hope of NED is not only to render high quality neurosurgical care by the visiting volunteer teams, but additionally both to educate the local physician and nursing staff in order to create a self-sustaining neurosurgical unit, and to serve as a center of higher neurosurgical education for East Africa in conjunction with the East Africa Neurosurgery Residency Training Program, which is based in Nairobi and was founded by Drs. Young and Qureshi.

For information about NED, its activities, and charitable donations the website is www.nedfundacion.org; email may be addressed to administracion@nedfundacion.org.

A shortage of [neurosurgeons](#) and a lack of knowledge of neuroendoscopic management of [hydrocephalus](#) limits modern care in sub-Saharan [Africa](#). Hence, a mobile teaching project for [endoscopic third ventriculostomy](#) (ETV) procedures and a subsequent program to develop neurosurgery as a permanent specialty in Kenya and [Zanzibar](#) were created and sponsored by the [Neurosurgery Education and Development Foundation](#) (NED) and the Foundation for International

Education in Neurological Surgery. The objective of this work was to evaluate the results of surgical training and medical care in both projects from 2006 to 2013.

Two portable [neuroendoscopy](#) systems were purchased and a total of 38 ETV workshops were organized in 21 hospitals in 7 different countries. Additionally, 49 medical expeditions were dispatched to the Coast General Hospital in [Mombasa, Kenya](#), and to the [Mnazi Mmoja Hospital](#) in [Zanzibar](#).

From the first project, a total of 376 infants with hydrocephalus received surgery. Six-month follow-up was achieved in 22%. In those who received follow-up, ETV efficacy was 51%. The best success rates were achieved with patients 1 year of age or older with [aqueductal stenosis](#) (73%). The main causes of [hydrocephalus](#) were infection (56%) and [spina bifida](#) (23%). The mobile education program interacted with 72 local surgeons and 122 nurses who were trained in ETV procedures. The second project involved 49 volunteer neurosurgeons who performed a total of 360 nonhydrocephalus neurosurgical operations since 2009. Furthermore, an agreement with the local government was signed to create the Mnazi Mmoja NED Institute in [Zanzibar](#).

Mobile endoscopic treatment of hydrocephalus in East Africa results in reasonable success rates and has also led to major developments in medicine, particularly in the development of neurosurgery specialty care sites ¹⁾

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Piquer J, Qureshi MM, Young PH, Dempsey RJ. Neurosurgery Education and Development program to treat hydrocephalus and to develop neurosurgery in Africa using mobile neuroendoscopic training. J Neurosurg Pediatr. 2015 Jun;15(6):552-9. doi: 10.3171/2014.10.PEDS14318. Epub 2015 Mar 6. PubMed PMID: 25745948.

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