

## Research Proposal

**Title:** Endoscopic Third Ventriculostomy Training to Treat Spina Bifida Related Hydrocephalus in Africa: A Literature Review

**Program of Study:** Biomedical Sciences

**Presentation type:** Print Poster

**Contact Information:** Caryssa Burckart (cburckart@liberty.edu)

**Mentor Contact Information:** Dr. Michael Price (msprice2@liberty.edu)

**Category:** Applied

### Abstract

This project was a literature review of the current efforts toward endoscopic third ventriculostomy training to treat spina bifida related hydrocephalus in Africa. Neurosurgical care in Africa is greatly limited by a shortage of neurosurgeons and a lack of knowledge of neuroendoscopic management of hydrocephalus. Hydrocephalus in Africa, especially in infants, is vastly undertreated. Even those few children who are able to receive standard shunt surgery are left with a lifetime dependency due to the periodic monitoring and likely complications associated with the placement of a ventriculoperitoneal shunt. This, along with other financial, social, and sanitary limitations, make shunt surgery not only impractical, but oftentimes impossible, in many impoverished regions of Africa. Endoscopic third ventriculostomy (ETV) has been identified as a promising alternative to shunt surgery, requiring minimal follow-up and with a high success rate, as well as a low rate of complications. However, the problem of the availability of trained staff still stands. The purpose of this study was to explore educational efforts to upscale the use of ETV in Africa. In order to do this, a PubMed ® search was

performed for articles on neurosurgical management in patients with SB. Articles were identified by searching for the terms “ETV and Africa and hydrocephalus.” Articles were excluded if they did not refer to the management of hydrocephalus among individuals living with spina bifida. Articles meeting inclusion criteria were classified according to management method (i.e. shunt, ETV, ETV/Choroid plexus cauterization). Because the use of ETV is still not widespread in Africa, I expected to find that there are not many programs in place with the goal of training surgeons in this procedure. However, I hoped to identify any current strategies that may provide a replicable model for expanding the training, and ultimately use, of ETV. Identifying and expanding these educational efforts is a crucial step in alleviating the burden of hydrocephalus associated with spina bifida on the African population.