

# The Moore Pediatric Surgery Center in Guatemala: *A Novel Surgical Model for Low-income Countries*

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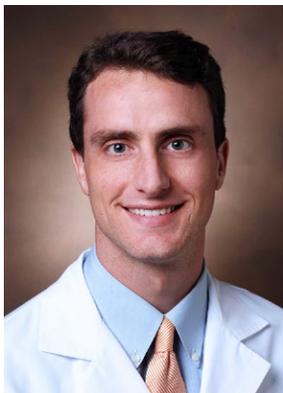
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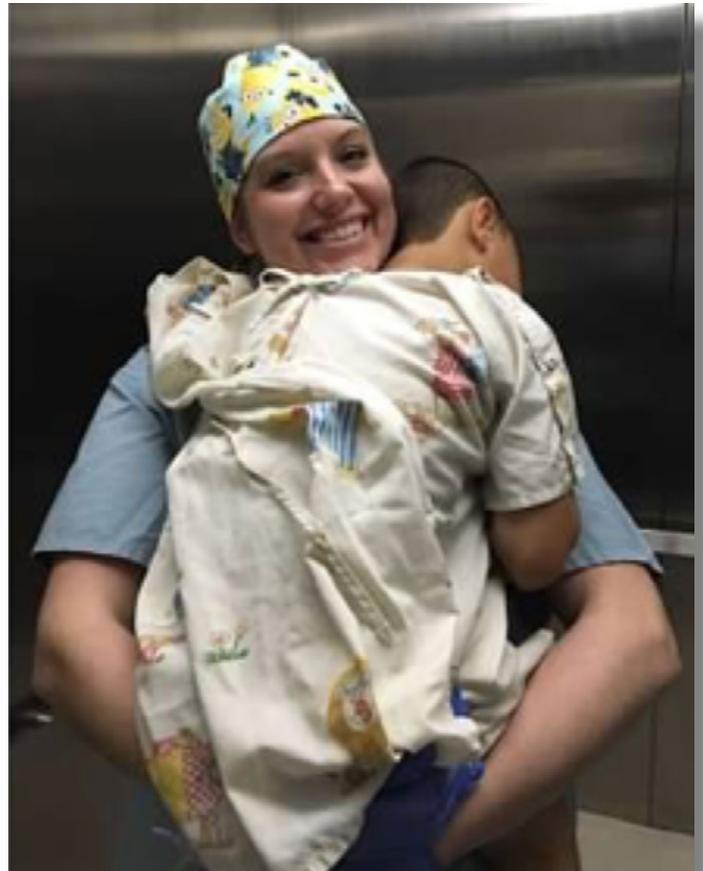
**The Moore Pediatric Surgery Center is the base of operations for the Shalom Foundation's<sup>1</sup> Medical Program in Guatemala.** The 12,000-square-foot facility offers three O.R.s, six pre-op beds, two intensive care unit beds and 21 inpatient recovery beds. The facility also hosts a nursing station, pharmacy, conference room, laundry facilities, commercial kitchen and resident's quarters. The foundation's commitment to providing pediatric surgery to the many children in Guatemala who would otherwise not have access is made possible through visiting short-term surgical mission teams from the United States. Last year, the center provided nearly 1,000 procedures in four specialty areas. Since 2005, Monroe Carell Jr. Children's Hospital at Vanderbilt has provided surgical teams twice a year in support of the Moore Surgery Center.



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Meghan Hawk, RN, transporting a child from the postoperative unit to the inpatient unit.



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One of three O.R.s available at the Moore Pediatric Surgery Center, with equipment similarly found in the U.S.

Recently, a team of Vanderbilt physicians, nurses and surgical scrub technicians spent six days at the Moore Pediatric Surgery Center in Guatemala City, providing ENT services to 79 children and adolescents. Annually, Vanderbilt sends two surgical teams to the Moore Center, covering several specialties in great demand, including ENT, plastics, orthopedics and urology. During the recent trip, the otolaryngologists screened 106 patients in the preoperative clinic to evaluate them for potential surgery. The screened patients were then evaluated by the physician anesthesiologists in preparation for surgery. Once cleared for surgery, patients were scheduled over the following five days. Surgical procedures included adenotonsillectomy, airway evaluations for subglottic stenosis, and tympanoplasty, among others.

A tongue-tied teenage boy was treated during our recent trip. It was difficult for him to pronounce sounds prevalent in the Spanish language. This very short, simple procedure, which is frequently done in the physician's office when the infant is just a few months old, was not otherwise available. The operation in combination with speech therapy will be life-changing for this boy and his family.

The Moore Center hosts teams annually from around the country: orthopedics from Dell Children's in Texas, pediatric dentists from Alabama and Georgia, urologists

from Duke in North Carolina, plastic surgery from Colorado Children's, Miller Children's from California provided ENT services, and Vanderbilt routinely provides ENT, urology, orthopedics and dentistry on a rotating basis. The teams visit the Moore Center for one week at a time.

The Moore Pediatric Surgery Center employs a full-time medical director, business administrator, chief nurse, book-keeper and social worker. Local physicians provide the proper prescreening and appropriate follow-up care for each mission team's patients. A local surgeon representing the visiting specialty is an invited guest for the week. This Guatemalan surgeon assists with the postoperative care and visits as well. The medical director is a pediatrician who is on call to attend for any emergencies that may occur, and the surgery center is staffed 24 hours a day by Guatemalan medical residents.

The three state-of-the-art O.R.s are similar to those seen in the U.S. Each is equipped with an O.R. table, anesthesia machine and monitors, central suction, central oxygen, air and nitrous oxide, electro-surgery units, air conditioning and a back-up generator. The instrument sterilization room is equipped with two steam sterilizers and one small autoclave. The surgery center also provides purified water and access to hot water.

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The Moore Center is a unique model of surgical service delivery and may be a viable option for other low-income countries looking to scale up national surgical options. As a center specializing narrowly in acute perioperative care, the Moore Center is able to achieve considerable standardization of its processes and care pathways and provide an environment that is similar to the ones that visiting teams utilize at home. This increases the efficiency and overall quality of the care provided. In addition, because the center is an independent facility, it avoids some of the complications that can occur when visiting teams use local hospitals to perform operations. Among these are taking up O.R. time that may be needed by local providers for their own patients, using local equipment and disrupting supply chains, and straining local nursing and clinical resources with a high volume of complex cases in a short amount of time. Finally, the center allows trainees from U.S. academic institutions to practice in a supervised environment and gain exposure to the complexities of health care in a low-income setting, potentially leading to further career investment in overseas missions. The benefits of similar models have been shown in other organizations, such as Operation Smile, which has developed comprehensive cleft care centers to provide high-quality, standardized cleft lip and palate repair.<sup>2</sup>

For all of its advantages, this model of health care provision does have some disadvantages. The scope of care is dependent

on international volunteerism and donation that may fluctuate over time. Currently, the center does not incorporate an educational component to bolster local capacity, although this could be added at a later time. In addition, providing services at an independent facility separate from the broader health care system does little to contribute to collateral system improvements that can be observed from investment in local providers.

With the recent publication of findings from the Lancet Commission on Global Surgery that 5 billion people lack access to safe and affordable surgical and anesthesia care when they need it, the urgency for improving surgical care globally has never been clearer.<sup>3</sup> The Moore Pediatric Surgery Center has provided successful surgical care for thousands of patients in Guatemala who would not otherwise have access to the operations they require. Among the many interventions required to meet the tremendous need for global surgery, this is a successful model of care that should be supported and replicated to help patients in similar settings worldwide.

#### References:

1. The Shalom Foundation website. <http://www.theshalomfoundation.org>.
2. Bermudez LE, Lizarraga AK. Operation Smile: How to measure its success. *Ann Plast Surg.* 2011;67(3):205-208.
3. Meara JG, Leather AJ, et al. Global Surgery 2030: Evidence and solutions for achieving health, welfare, and economic development. *Lancet.* 2015;386(9993):569-624.



Moore Center Courtyard and café, where families can wait and children can play.