The American Journal of Surgery (2016) 211, 294-299

The American Journal of Surgery®

Surgical Education

Surgery resident participation in short-term humanitarian international surgical missions can supplement exposure where program case volumes are low

Asha G. Bale, M.D., F.A.C.S.[a,*], Ziad C. Sifri, M.D., F.A.C.S.[b,1]

[a]*Department of Surgery, Palisades Medical Center, 7600 River Road, North Bergen, NJ 07047, USA;*
[b]*Department of Surgery, Rutgers University New Jersey Medical School, 185 South Orange Avenue, Newark, NJ 07103, USA*

KEYWORDS:
Global surgery;
Surgery missions;
International humanitarian missions;
General surgery residency;
Education;
Case logs

Abstract

BACKGROUND: General surgery training programs face declining case volume and diversity. We wanted to determine if resident participation in international surgical missions would increase exposure to cases underrepresented in our program case mix.

METHODS: Accreditation Council for Graduate Medical Education program data from 2008 to 2011 (University of Medicine and Dentistry-New Jersey Medical School, Newark, NJ) were analyzed to identify categories where volume was below national average. This was compared with case logs from 3 missions conducted by International Surgical Health Initiatives between 2011 and 2012.

RESULTS: All chief residents completed more than minimum required index cases. Categories head and neck, alimentary tract, abdomen, and endocrine showed percentile below national average. Seven residents participated in 3 missions to Philippines and Sierra Leone. Sixty-five percent of the operations performed were in the 4 low-volume categories.

CONCLUSIONS: International surgery missions expose residents to a high volume and variety of cases. Participation can be one way to increase case volume and diversity during training. Cases completed on missions with board certified surgeons should be considered for Accreditation Council for Graduate Medical Education credit.

The benefits of short-term humanitarian international surgical missions in places with limited access to surgery include provision of free operations to populations with high surgical burden and cultural and information exchange between visiting and local healthcare teams. When surgical residents participate in mission activities, there are additional benefits both clinical and humanistic. By learning to work in resource-limited environments abroad, residents improve their history and physical examination skills, increase their cultural competency, and feel a heightened sense of responsibility toward global surgery.[1,2] More importantly, they have an opportunity to perform or observe operations they have low exposure to during residency training.

The authors declare no conflicts of interest.

* Corresponding author. Tel.: +1-201-710-2750; fax: +1-201-295-4837.
E-mail address: Abale@palisadesmedical.org

Manuscript received February 3, 2015; revised manuscript April 30, 2015

[1] Present address: Department of Surgery, Rutgers University New Jersey Medical School, 150 Bergen St M232, Newark, NJ 07103, USA.

0002-9610/$ - see front matter © 2016 Elsevier Inc. All rights reserved.
http://dx.doi.org/10.1016/j.amjsurg.2015.05.017

Several authors have reported that graduating general surgery chief residents may have decreased readiness to practice even after 5 years of residency.[3–6] Much of this has been attributed to decreases in case volume and case diversity during training, which occurs for multiple reasons.[7–9] Eighty-hour work rules may limit residents' exposure to low-volume operations.[7,8,10] Training hospitals with specialty surgery fellowship programs or integrated subspecialty programs may result in cases being preferentially allotted to fellows instead of general surgery residents.[7,11,12] Increasing minimally invasive surgery techniques and nonoperative management of abdominal trauma have reduced the volume of open surgery and consequently the residents' exposure to open techniques.[13–15] Increasing faculty specialization at academic institutions, changes in referral patterns, and preferential referral of patients to "Centers of Excellence" may contribute to decreased case diversity for the general surgery resident as well.[16,17] Finally, some types of cases such as endocrine have been low volume in general surgery residency for the past 20 years.[4] Eighty percent of graduating chief residents opt to pursue additional fellowship training, which provides extra years to increase proficiency and clinical confidence.[18,19]

Resident interest in short-term humanitarian international surgical missions is astoundingly high. A national survey of American College of Surgeons resident members revealed that 92% were interested in an international elective, and 73% were willing to participate even if cases did not count toward graduation requirements.[20] Residents who participate in a humanitarian surgical mission strongly agree that it is a quality educational experience.[2] However, operations performed during an international mission do not count toward minimum case requirements set by the Accreditation Council for Graduate Medical Education (ACGME) unless done in the setting of a formal international rotation. This study was done to determine if surgical resident participation in humanitarian international surgical missions could increase exposure to operations that were underrepresented in our residency program case mix.

Patients and Methods

Three years (2008 to 2011) worth of ACGME program data from University of Medicine and Dentistry-New Jersey Medical School, Newark, NJ, were analyzed to identify the areas in which case volume was less than the national average (<50%). University Hospital is a 529-bed hospital in Newark, NJ, serving an inner city urban population. The general surgery residency program has 8 chief residents graduating yearly.

Currently, international rotations for surgical residents are not available through the program; however, residents have the opportunity to participate in short-term humanitarian missions with International Surgical Health Initiatives (ISHI), a nonprofit organization founded by 2 faculty surgeons. All surgeons who participate are certified by the American Board of Surgery. ISHI conducts multiple missions yearly, which include 1 to 3 surgical residents. Residents use vacation time to participate and pay their own air travel expense. The case logs from 3 international surgery missions conducted by ISHI in which there was resident participation between February 2011 and February 2012 were analyzed. Case type from these missions was compared with the program case mix.

Results

From 2008 to 2011, all graduating chief residents in the residency program completed more than the minimum required number of cases in each category as mandated by the ACGME; however, 4 areas consistently fell below the national average. Principle-defined categories in which the program fell below the 50th percentile compared with national averages included head and neck, alimentary tract, abdomen, and endocrine (Table 1).

Over a 12-month time period (February 2011 to February 2012), there were 3 surgery missions to 2 underdeveloped countries: (1) Escalante City, Philippines; (2) Kabala, Sierra Leone; and (3) Dapitan City, Philippines. Each mission was about 2 weeks in duration with 5 to 7 operating days at the host hospital (Fig. 1). Each hospital served rural populations, where patients had limited or no access to surgery either because of lack of surgeons or excessive cost of care. All missions included attending surgeons and 1 to 3 general surgery residents (postgraduate year 2 or above). Seven residents participated in the 3 missions. Resident experience included preoperative assessment of surgical patients, participation in the operating room and minor procedures area, and providing postoperative care.

Table 1 Number of cases in low-volume categories for general surgery residents

	ACGME minimum requirement (5 years)	UMDNJ resident average* (5 years)	ACGME national average* (5 years)	Average number of operations on a mission† (1 week)
Head and neck	24	42	66	2
Alimentary	72	204	222	2
Abdominal	65	238	248	33.7
Endocrine	8	12	34	1.7

ACGME = Accreditation Council for Graduate Medical Education; UMDNJ = University of Medicine and Dentistry New Jersey.
*ACGME data (2008 to 2011).
†International Surgical Health Initiatives (February 2011 to 2012).