A wider influence: The impact of formal humanitarian otology training on otology-neurotology fellows

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Abstract

Objectives: Long-term commitment to humanitarian surgical outreach requires the opportunity, resources, and time to participate, but perhaps more importantly, it requires a preceding successful outreach experience. The Accreditation Council for Graduate Medical Education (ACGME) expects physician trainees to achieve six Core Competencies: patient care, medical knowledge, interpersonal and communication skills, professionalism, practice-based learning and improvement, and systems-based practice. This study investigates the challenges and benefits of a supervised humanitarian experience with a focus on ACGME Core Competencies, future global outreach, and commitment to education.

Study design: Physician survey and program curriculum review.

Methods: Participants in a supervised humanitarian educational experience at a single Otology-Neurotology Fellowship Program between the years of 2006 and 2019 were surveyed. Barriers to participation, challenges, benefits, prior and ongoing humanitarian efforts, and education endeavors were discussed.

Results: Challenges including time away from fellowship, logistical difficulties with Resident Review Committee recognition of operative case volume, and civil unrest were encountered. Benefits within all six ACGME Core Competencies were achieved. International collaboration with local providers, patients, and families with diverse socioeconomic and cultural backgrounds allowed bidirectional education while striving for safe, innovative solutions in resource-poor environments.

Conclusions: A supervised education experience with a sustainable humanitarian otology program offers Neurotology fellows an early positive experience near the end of their formal training. ACGME Professionalism goals were achieved through building collegial relationships with local otolaryngologists and staff, while fostering a sense of responsibility to assist those in developing nations. Participation correlated with an ongoing commitment to humanitarian efforts and education post-fellowship.
INTRODUCTION

Five to 10% of the population worldwide experiences an ear disorder.1 The World Health Organization estimates that 466 million people (6.1% of the world's population) experience disabling hearing loss, with a higher prevalence in low- and middle-income nations.2 International humanitarian medical outreach can provide a rewarding experience for physicians who desire to make a difference for patients living in extreme poverty in resource-poor environments, while providing valuable service and learning opportunities.

Long-term commitment to humanitarian surgical outreach often depends on a prior successful outreach experience. Since 2006, Otology-Neurotology fellows at a large tertiary-referral private practice otology group have been participating in an optional humanitarian otology elective during their second year of fellowship training. The goals of this elective are to encourage collegiality and service for those in developing nations, foster a lifelong desire to educate, understand how to accomplish goals with limited resources, and also to support the Accreditation Council for Graduate Medical Education (ACGME) Core Competency goals.3 This study aims to elucidate the challenges and benefits of a supervised sustainable humanitarian otology experience with a focus on ACGME Core Competencies, future global outreach, and commitment to education.

MATERIALS AND METHODS

Twenty-seven former fellows of a single Otology-Neurotology Fellowship Program between the years of 2006 to 2019 were surveyed, including both participants and nonparticipants in the supervised humanitarian otology elective. Motivations and barriers to participation, challenges, benefits, prior and ongoing humanitarian efforts, and education endeavors were assessed. The Institutional Review Board determined the study qualified as an exempt review (IRB #19-025).

A 10-question survey was performed using SurveyMonkey (San Mateo, California). The questions are listed below. Full survey listed as Appendix.

1. What inspired your desire to participate in the humanitarian otology experience during fellowship?
2. What were major barriers to your participation?
3. What were some challenges that you experienced?
4. What were some benefits or rewards from the experience?
5. Based on your overall experience, did it make you more or less likely to participate in a humanitarian otology experience in the future?
6. Have you participated in a humanitarian otology experience post-fellowship?
7. Did you participate in a humanitarian medical experience pre-fellowship?
8. Do you currently act as an educator?
9. What year did you complete fellowship?
10. Where did you perform your humanitarian otology experience?

RESULTS

Of the 27 individuals surveyed, 22 responses were obtained (81.5% response rate). Thirteen (59.1%) were participants and nine (40.9%) were nonparticipants. Nonresponders had a roughly equivalent rate of participation (three participated and two did not). Humanitarian outreach was performed in American Samoa (n = 1), Bolivia (n = 1), Cambodia (n = 3), Ecuador (n = 1), Ethiopia (n = 2), Nepal (n = 2), Nicaragua (n = 3), and Peru (n = 1). Participants performed surgical procedures, pre- and postoperative patient evaluations, and instructional sessions with local physicians and surgeons under the guidance of an organized sustainable otology program. Nonprofit service organizations including Global ENT Outreach, Britain Nepal Otology Service (BRINOS), and Ear Aid Nepal served as partners for these sustainable otology humanitarian projects. Most also worked in concert with audiology outreach services.

Motivations

All participants endorsed multiple motivating factors to engage in the humanitarian otology elective (Figure 1). The most commonly cited reasons were to educate other physicians and surgeons (54.4%), to
deliver care to disadvantaged persons (45.5%), to experience medicine in a different setting (36.4%), and to develop relationships with physicians and surgeons in other countries (31.8%). The desire to both educate others and learn about medicine in a different setting underscores an openness to bidirectional learning through international collaboration.

3.2 | Barriers to participation

The most commonly cited barrier (Figure 2) for both participants and nonparticipants was conflicting clinical responsibilities (45.5%), specifically including desirable surgical opportunities in home fellowship program (27.3%). Other common reasons were
family responsibilities (31.8%) and financial concerns (31.8%). For participants, the greatest barriers were financial (53.8%), conflicting clinical responsibilities (53.8%), and family responsibilities (30.8%). Nonparticipants reported conflicting clinical responsibilities, more desirable surgical opportunities, and family responsibilities as their greatest barriers (33.3% each). Interesting, only participants cited a financial barrier, suggesting that either this was not a factor for nonparticipants deciding to forgo the elective or that the financial impact was only apparent after one had chosen to participate.

### 3.3 Challenges

The main challenges cited (Figure 3) reflected the logistics of this international elective experience—the Resident Review Committee

![Figure 3](image1.png)

**FIGURE 3** Responses to question 3: What were some challenges that you experienced? Number of respondents on the x-axis, percentage of responses by each colored bar

![Figure 4](image2.png)

**FIGURE 4** Responses to question 4: What were some benefits or rewards from the experience? Number of respondents on the x-axis, percentage of responses by each colored bar
A few also experienced concern for their personal safety abroad either due to civil unrest or infectious disease exposure (9.1% each), and others developed concerns for patient care in the resource-poor environment. Overall, there was a low rate of challenges noted, with only 1 to 3 respondents expressing each concern.

### 3.4 | Benefits

Many more positive responses were obtained regarding the benefits gained, with approximately half or more of the participants affirming each benefit (Figure 4). Many participants reported growth in professionalism: Improved understanding of socioeconomic challenges (92.3% participants, 54.5% total); improved cultural competency; and positive collaborations with local physicians/surgeons (76.9% participants), OR staff (69.2%), and patients and their families (40.9%). There were many learning opportunities reported, as 76.9% of participants acquired innovative solutions to deliver care in a resource-poor environment, and with some reporting that their surgical (69.2%), teaching (53.8%), and foreign language skills (46.2%) had improved. Many also noted personal growth, with 69.2% of participants stating they learned something about themselves, and one who wrote in “spiritual growth” as an additional benefit.

### 3.5 | Prior and ongoing humanitarian efforts

Fifteen percent of participants stated the experience would not influence their likelihood of future humanitarian efforts, whereas 84.6% of participants (50% of total respondents) stating they were more likely or much more likely to do so (Figure 5).

Post-fellowship, a greater number of participants continued to perform humanitarian outreach both internationally (53.8%) and
domestically (15.4%), compared with nonparticipants (33.3% and 11.1%, respectively). However, this difference between groups did not reach statistical significance ($P = .384$; Figure 6). Although a slightly higher percentage of participants had engaged in humanitarian outreach pre-fellowship (46.2%) than nonparticipants (33.3%), this also did not reach statistical significance ($P = .674$; Figure 7).

3.6 | Education efforts

Since all humanitarian trips included a component in which the fellow acted as an educator (lectures to local physicians, surgical simulation, and/or operating alongside local physicians or residents), the impact of this training on future educational roles was assessed. The vast majority (90.9%) described themselves as an educator (Figure 8). Most (72.7%) reported an academic practice setting. Both academicians and private practice surgeons reported teaching temporal bone courses, students, and international physicians. One respondent in each group denied a current role as an educator; therefore, there was no difference between groups.

4 | DISCUSSION

Global health outreach offers physicians a chance to serve patients with significant needs while gaining valuable insight into how
medicine is practiced across different cultures and environments. Both visiting and host physicians have a rich opportunity for bidirectional exchange of ideas while building relationships. However, careful collaboration and an understanding of the local environment, needs, and resources is required to prevent harm. Without proper preparations, reasonable expectations, and ensuring appropriate follow-up care, visiting physicians may leave disillusioned with humanitarian service. This fellowship program’s humanitarian otology elective involved partnerships with sustainable global health nonprofit programs, in collaboration with local physicians and institutions that host repeated visits from international physicians. Global health sustainability implies a durable impact in health outcomes, beyond the few patients that were directly treated during a single outreach experience.4

4.1 | ACGME Core Competencies

Humanitarian service provides opportunities for trainees to develop the six Core Competencies established by the ACGME: (1) patient care, (2) medical knowledge, (3) interpersonal and communication skills, (4) professionalism, (5) practice-based learning and improvement, and (6) systems-based practice. Regarding patient care (ACGME Core Competency 1), global outreach teaches physician trainees how to provide compassionate and effective patient care in resource-poor environments without the heavy reliance on complex technology and equipment available in most academic otology training programs. Many participants stated that they learned innovative solutions for care delivery in these environments. Participants cited improved medical knowledge (ACGME Core Competency 2) and improved surgical skills. Participants were exposed to more prevalent advanced otologic pathology including chronic otitis media and cholesteatoma than encountered in daily practice in the United States.5

Interpersonal and communication skills (ACGME Core Competency 3) were improved as participants developed positive relationships with local physicians, OR staff, patients, and families. Participants were challenged to improve their language skills and communicate across differing socioeconomic and cultural backgrounds. Professionalism (ACGME Core Competency 4) was encouraged as participants reported learning from the collaborative relationships forged, thereby growing in their compassion, respect for diversity, and cultural sensitivity. Many cited a desire to deliver care to disadvantaged persons as a major driver of participation.

After completion of the humanitarian otology elective, participants were required to write an essay of their experience including what they learned and self-reflection. Most participants noted that they learned something about themselves. A few were challenged by patient morbidity and mortality. Additionally, most were motivated to participate in part to help educate other physicians and surgeons. All of those fulfilled goals for practice-based learning and improvement (ACGME Core Competency 5). Experience with creatively addressing problems in the resource-poor environment gives participants a new perspective on systems-based practice (ACGME Core Competency 6). Trainees can thus learn flexibility in various health care delivery settings to be able to optimize patient care in the larger context of the global health care system.

4.2 | Humanitarian and education efforts

Most participants (85%) stated that the experience made them either more likely or much more likely to perform humanitarian outreach in the future. Participants had a slightly higher rate of post-fellowship international humanitarian service (53.8% vs 33.3%), although this did not reach statistical significance. Four participants actively involved in humanitarian efforts had no pre-fellowship international humanitarian experience. Regarding the impact of the formal humanitarian otology elective on his decision to pursue ongoing global outreach, one of those four stated:

During my fellowship as a second year fellow, I had the opportunity to contribute to a humanitarian otologic trip in Phnom Penh. My experience during my trip was engaging, challenging, and really illuminated how fortunate we are in the United States. I appreciated the opportunity to teach and the emphasis on passing on skills relevant to diseases encountered by the local providers. Being open to the experiences that may arise uniquely on any of these opportunities is important. I have continued to go on these trips as an attending (Cambodia, Peru, Ethiopia) because I appreciate the opportunity to teach and pass on skills to those who might need it most and have enjoyed the friendships I have made along the way.

Nearly all participants and nonparticipants alike served as ongoing educators. This likely reflects the high percentage of Neurotologists who enter academic medicine post-fellowship as well as the wide variety of teaching roles Neurotologists can undertake.

4.3 | Challenges

Although few challenges were noted overall, one of the most common was that the RRC did not recognize cases performed during the humanitarian elective as part of their case log for graduation requirements. In 2011, the American Board of Surgery and the RRC approved international rotations to count toward general surgery graduation requirements, increasing interest from general surgery residents.6 Similar approval by the RRC and the American Academy of Otolaryngology-Head and Neck Surgery would likely likewise enhance participation in global health initiatives by otolaryngology residents and Neurotology fellows.

4.4 | Limitations

This study was limited by a small sample size in a small surgical subspecialty. However, the benefits of humanitarian medical outreach in
supporting the ACGME Core Competencies for trainees including professionalism are generalizable to other surgical and medical fields.

5 | CONCLUSIONS

A supervised humanitarian otology experience can provide formal surgical outreach training while meeting many goals of the six ACGME Core Competencies. Participants demonstrated an ongoing commitment to humanitarian service and education after fellowship.

CONFLICT OF INTEREST
The authors declared no potential conflicts of interest.

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SUPPORTING INFORMATION
Additional supporting information may be found online in the Supporting Information section at the end of this article.

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