

# The Importance of International Medical Rotations in Selection of an Otolaryngology Residency

NATHAN H. BOYD, MD

RAUL M. CRUZ, MD

## Abstract

**Background** The objective of this study was to determine the extent of interest in international electives among prospective otolaryngology residents and to determine whether the availability of international electives affected students' interest in ranking a particular residency program.

**Methods** A 3-part survey was given to all medical students enrolled in the 2008 otolaryngology match via the Electronic Residency Application Service. Part 1 elicited demographic information. Part 2 explored general interest in international rotations. Part 3 involved ranking several factors affecting students' choice of residency programs. This survey was developed at our institution, with no formal validation. Participation was anonymous and voluntary.

**Results** A total of 307 students entered the otolaryngology match, and 55 surveys (18%) were completed. Twenty-five of 55 students (55%) had

completed an international elective during or prior to medical school, and 51 of 55 respondents (93%) had a "strong" or "very strong" desire to participate in an international elective during residency; 48 of 55 students (87%) had a "strong" or "very strong" desire to participate in international surgical missions after residency. Future practice goals had no correlation with interest in international rotations, either during or after residency training. Respondents ranked 8 factors that had an impact on residency program selection in the following order of importance: operative experience, location, lifestyle, research opportunities, didactics, international electives, prestige of program, and salary.

**Conclusion** Interest in international medicine among prospective otolaryngologists was high in this subset of respondents but did not appear to affect residency program selection.

## Background

The World Health Organization has estimated that 11% of the global health burden is composed of surgical disease.<sup>1</sup> Volunteer participation in medical missions is an important component in the effort to address national and global health disparities and is on the rise.<sup>2,3</sup> According to multiple surveys, over 90% of general surgery residents in the United States would "prioritize" participation in an international medical elective.<sup>4-6</sup> The availability of international medical electives affects residency selection in the fields of internal medicine and family practice.<sup>7</sup> We are not aware of any studies examining interest in international medical electives among prospective

otolaryngology residents or how the availability of such electives may affect residency selection.

## Methods

An anonymous survey assessing interest in international medical electives was submitted to all otolaryngology resident applicants during the 2007–2008 academic year via the Electronic Residency Application Service. Surveys were also offered on a voluntary basis to applicants visiting the Kaiser Oakland otolaryngology program. The survey was divided into 3 sections. Section 1 elicited demographic information. Section 2 consisted of 3 statements: "I would like to participate on an international medical mission during residency"; "I plan to participate on international medical missions after residency"; and "I plan to work in an academic practice after residency." Participants were asked to respond to these statements on a 5-point Likert scale (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree). Section 3 asked participants to rank 8 factors (availability of international medical electives, operative experience, lifestyle, location, program prestige, research opportunities, formal didactics, and salary) in order of importance for residency selection. This survey was developed at our institution with no formal validation.

**Nathan H. Boyd, MD**, was a Resident at Kaiser Permanente, Oakland, California and is currently a fellow at the University of Iowa; and **Raul M. Cruz, MD**, is the Program Director of the otolaryngology residency program at Kaiser Permanente, Oakland, California.

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Corresponding author: Nathan Boyd, 4307 Gilbert St, Oakland, CA 94611, nhboyd@gmail.com

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Participation was anonymous and voluntary. The survey was submitted to the Kaiser Foundation Research Institute and granted review exemption from the Institutional Review Board. Survey data were stored using Excel spreadsheet software (Microsoft, Redmond, WA) with no personal identifiers.

## Results

Surveys were sent to all 307 of the 2008 otolaryngology residency applicants. Fifty-five surveys were completed for a response rate of 18%. Respondents ranged in age from 24 to 36 years old (mean, 27.6 years old); 37 of 55 respondents (66%) were men, and 18 of 55 respondents (33%) were women. Twenty-five of 55 respondents (55%) had completed an international rotation while in medical school. Fifty-one of 55 respondents (93%) had a “strong” or “very strong” desire to participate in an international elective during residency; 48 of 55 respondents (87%) had a “strong” or “very strong” desire to participate in international surgical missions after residency. Thirty-one of 55 respondents (56%) planned to work in an academic practice after residency. Future practice goals (academic versus nonacademic) had no correlation with interest in international rotations either during (29 of 31 respondents [94%] vs. 22 of 24 respondents [92%]) or after (28 of 31 respondents [90%] vs. 20 of 24 respondents [83%]) residency training. Age did not affect interest in international rotations. Respondents ranked 8 factors as having an impact on residency selection in the following order of importance: operative experience, location, lifestyle, research opportunities, didactics, international electives, prestige of program, and salary (TABLE).

## Discussion

Studies have demonstrated a high degree of interest in international electives among general surgery residents.<sup>4,5</sup> To our knowledge, these issues have not been addressed in the otolaryngology literature. Our data demonstrate widespread interest in international electives among future otolaryngologists. In fact, student participation in international electives is rapidly growing. Studies in 1982 and 2002 and our data from 2008 report, respectively, that 6%, 21%, and 55% of students previously completed an international elective.<sup>1</sup> Over half of our respondents had already completed one or more international electives during medical school, and most students expressed a desire to participate in international electives both during and after residency. We hypothesized that those respondents planning a career in academics might have a greater interest in international medical missions, but the desire to participate was high regardless of career plans.

Despite students' interest in international electives, the availability of electives does not appear to have a significant impact on residency selection. The most important factors for

TABLE		
BREAKDOWN OF RESIDENCY SELECTION FACTORS		
First Choice	Frequency	Percent
Operative experience	46	84
Location	5	9
Second Choice		
Location	25	45
Research opportunities	8	15
Operative experience	7	13
Lifestyle	6	11
Didactics	5	9

students were operative experience and geographic location of the program. Lifestyle, research opportunities, and didactics were of secondary importance; and availability of international electives, program prestige, and salary were of tertiary importance. Data clearly support the fact that perceived operative experience was the single most important selection factor and that anticipated salary was the least.

The ability to generalize from this study is limited due to the lack of survey validation, as well as the strong possibility of selection bias. About 20% of the total otolaryngology resident applicant pool responded to the survey, and most respondents were those applicants who interviewed at Kaiser Oakland hospital. While Kaiser Oakland is a tertiary referral center with a scope of practice similar to that of a major academic center, it has no official university affiliation. This feature of the residency program may have attracted a specific subtype of otolaryngology applicant. Subset analysis of data based on future career goals was performed in an attempt to correct for this study limitation. One mitigating factor with respect to the low survey response rate is the competitive nature of the otolaryngology residency application process. Otolaryngology applicants generally apply to a large number of residency programs, frequently to every program in a given region, and our applicant pool is essentially very similar to that of the nearby university-affiliated programs. Nevertheless, results of this study should not be generalized to represent the views of the average otolaryngology applicant.

International surgical missions are an important component in the effort to reduce global health disparities. Thompson et al<sup>7</sup> and Gupta et al<sup>8</sup> showed that residents who participated in international electives are more likely to pursue a career in academics or work for the medically underserved after training. Despite this potential benefit, only approximately 10% of general surgery residents participated in an international elective during training.<sup>5</sup> The small number of residents participating in such

rotations is due primarily to time and monetary constraints, as resident involvement in international electives is generally unsubsidized and often requires the use of vacation time.<sup>4,5</sup> Moreover, the Accreditation Council for Graduate Medical Education (ACGME) does not formally recognize resident cases logged abroad unless stringent requirements are met. However, evidence suggests that international medical electives address all 6 of the ACGME core competencies for residency training and offer unique opportunities to develop history and clinical examination skills in an environment with limited technological resources.<sup>2,6</sup>

Our study shows that interest in international medicine among prospective otolaryngologists is high, although availability of international electives does not appear to affect residency selection. The years spent in a surgical residency provide a window of opportunity in which future social service values can be molded. While residents' interest in international electives is high, this interest is not great enough to drive decision making during the residency selection process. The adoption of international electives will therefore have to be driven by the ACGME and by leadership within individual training programs. Monetary subsidies, time off allotment, and greater flexibility by the ACGME in crediting international work would address the most substantial barriers to residents' participation in international electives.

## Conclusion

Prospective otolaryngologists participating in this study expressed a strong interest in international medicine, but the availability of international electives did not appear to affect residency selection. Results of this study should not be generalized to represent the views of all prospective otolaryngologists in the 2008 match given the low survey response rate.

## References

- 1 Ozgediz D, Jamison D, Cherian M, McQueen K. The burden of surgical conditions and access to surgical care in low- and middle-income countries. *Bull World Health Organ*. 2008;86(8):646–647.
- 2 Campbell A, Sherman R, Magee WP. The role of humanitarian missions in modern surgical training. *Plast Reconstr Surg*. 2010;126(1):295–302.
- 3 Pezzella AT. Volunteerism and humanitarian efforts in surgery. *Curr Probl Surg*. 2006;43(12):848–929.
- 4 Powell AC, Mueller C, Kingham P, Berman R, Pachter HL, Hopkins MA. International experience, electives, and volunteerism in surgical training: a survey of resident interest. *J Am Coll Surg*. 2007;205(1):162–168.
- 5 Powell AC, Casey K, Liewehr DJ, Hayanga A, James TA, Cherr GS. Results of a national survey of surgical resident interest in international experience, electives, and volunteerism. *J Am Coll Surg*. 2009;208(2):304–312.
- 6 Ozgediz D, Roayaie K, Debas H, Schechter W, Farmer D. Surgery in developing countries: essential training in residency. *Arch Surg*. 2005;140(8):795–800.
- 7 Thompson MJ, Huntington MK, Hunt DD, Pinsky LE, Brodie JJ. Educational effects of international health electives on US and Canadian medical students and residents: a literature review. *Acad Med*. 2003;78:342–347.
- 8 Gupta AR, Wells CK, Horwitz RI, Bia FJ, Barry M. The international health program: the 15-year experience with Yale University's internal medicine residency program. *Am J Trop Med Hyg*. 1999;61:1019–1023.