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Publication Date

2022-11-01

DOI

10.1016/j.jss.2022.06.043

Peer reviewed



Published in final edited form as:

J Surg Res. 2022 November ; 279: 436–441. doi:10.1016/j.jss.2022.06.043.

Global Surgery Opportunities for General Surgery Residents: Are We Making Progress?

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Abstract

Introduction: Global surgery efforts have significantly expanded in the last decade. While an increasing number of general surgery residents are incorporating global surgery experiences and research into their training, few resources are available for residency applicants to evaluate opportunities at programs to which they are applying.

Materials and Methods: A 17-question survey of all general surgery residency program directors (PDs) was conducted by the Global Surgery Student Alliance through emails to the Association of Program Directors in Surgery listserv. PDs indicated if they wished to remain anonymous or include program information in an upcoming online database.

Results: Two hundred fifty-eight general surgery PDs were emailed the survey and 45 (17%) responses were recorded. Twenty-eight (62%) programs offered formal global surgery experiences for residents, including clinical rotations, research, and advocacy opportunities. Thirty-one (69%) programs were developing a global health center. Forty-two (93%) respondents indicated that global surgery education was an important aspect of surgical training. Barriers to global surgery participation included a lack of funding, time constraints, low faculty participation, and minimal institutional interest.

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Conclusions: While most respondents felt that global surgery was important, less than two thirds offered formal experiences. Despite the significant increase in public awareness and participation in global surgery, these numbers remain low. While this study is limited by a 17% response rate, it demonstrates that more efforts are needed to bolster training, research, and advocacy opportunities for surgical trainees and promote a global perspective on healthcare.

Keywords

general surgery; global surgery; residency; surgical education

Introduction

There has been a rising tide of interest and activism in global surgery over the past several decades. However, the gross inequities in availability of access to quality and timely and affordable surgical care across the globe lacked international attention until the 2015 publication of the Lancet Commission Report on Global Surgery and the World Health Assembly Resolution 68.15 that validated surgery as a necessary component for primary healthcare globally.^{1,2} An increased attention at the international development level has thus supported upscaling of local infrastructure and education by governments through the formation of National Surgical, Obstetrics, and Anesthesia Planning. Human resources are a key component of sustainable capacity building, and a growing number of collaboratives support local training efforts. International partnerships for education help to respond to the immediate needs in low-income and middle-income countries (LMICs).^{3,4} To that end, many training institutions in the United States and other high-income countries have developed or expanded their international outreach efforts, including opportunities for surgical residents to participate in international training and research experiences.

Although there has been an increase in studies illustrating ongoing global surgery opportunities for United States residents across surgical specialties, there is no central, comprehensive, and up-to-date data repository for this information.⁵⁻¹³ A 2015 survey of general surgery program directors (PDs) specifically identified 34 programs that offered global surgery rotations or research for residents in training, increased from 23 in 2011 prior to The Accreditation Council for Graduate Medical Education (ACGME) approval of international rotations.⁶ However, program websites are often not updated and do not contain comprehensive information on the opportunities available and current departmental involvement.^{11,14}

The primary aim of the present study is to characterize current global surgery opportunities for resident trainees given the recent surge in interest and public attention. In addition, a secondary non-research focused aim is to use the data collected through this survey to fill the information gap. An open-access online database of global surgery initiatives of United States residents and residency training programs will be created to assist current residency applicants to evaluate global surgery opportunities at programs to which they are applying.

Materials and Methods

The survey questions listed in Table 1 were sent to the members of the Association of Program Directors in Surgery (APDS) listserv after approval from the University of Florida Institutional Review Board and the APDS survey review committee. This included 258 general surgery programs. The survey was distributed over three consecutive weeks in March and April 2021 by the leadership team of the Global Surgery Student Alliance (GSSA) to the APDS listserv via an email with a link to the REDCap survey. Respondents were given the opportunity to respond anonymously for the purposes of the current report or to additionally deanonymize the submitted information for entry into a public online database. The aim of this database is to assist general surgery residency applicants in understanding global surgery opportunities available at the various residency programs.

Descriptive statistics are provided for all variables. Data were analyzed using SPSS-25.

Results

Our survey was sent to 258 general surgery residency programs of which 45 (17%) responded. This included 24 (53%) university-based academic programs, 6 (13%) community programs, and 15 (34%) hybrid programs. Of the programs that responded, 28 (62%) offered formal global surgery opportunities. This included 25 (56%) programs which offered clinical rotations, 10 (22%) programs which offered research opportunities, and 4 (9%) programs which offered advocacy opportunities. In addition, 1 (2%) program offered residents a specific global surgery curriculum as part of a dedicated track for interested trainees and 2 (4%) offered postresidency fellowships. Although not every program provided global surgery opportunities, 42 (93%) reported that global surgery education and electives were an important aspect of training. Twenty-three (51%) programs also had opportunities for residents to obtain additional degrees during their training such as a Masters in Public Health or Public Policy.

Global surgery opportunities were organized by a formal institutional global health center at 8 (18%) programs. While many programs did not have formal global health centers, 31 (69%) programs were at various stages in creating one. Almost every program had faculty involved in some form of global surgery initiative (40, 89%). These initiatives were most frequently short-term medical missions (28, 62%) but also included long-term clinical work (22, 49%) and education or training (17, 38%). Residents were involved in global surgical work at 34 (76%) programs primarily through short-term medical missions (24, 53%) or elective rotations (17, 38%) (Table 2). Five (11%) programs organized regular global surgery meetings and 5 (11%) programs had dedicated global surgery journal clubs. Formal partnerships including reciprocal exchanges with individuals from LMIC institutions were present at 11 (24%) programs.

Several barriers to resident global surgery opportunities were mentioned. The most common issue presented was funding (36, 80%) followed by time away from other rotations and hospital responsibilities (28, 62%). A full list of barriers to participation is presented in Table 3.

Discussion

Global surgery opportunities are increasingly sought after by current and prospective general surgery trainees. While selected general surgery programs offer a spectrum of global surgery opportunities for trainees, barriers such as funding and time away from other rotations can impede involvement. Notably, the vast majority of PDs who responded to the survey believe that global surgery is an important part of surgical training. This study found that general surgery residency programs varied in the degree of resident and faculty involvement in global surgery, level of support for global surgery experiences, and barriers to participation. The variability in global surgery opportunities highlights the necessity of having an accurate, up-to-date, and comprehensive database of this information so that applicants to general surgery residency programs can make informed decisions regarding available opportunities.

Discussion about global surgery as a new and evolving field in academic medicine has stimulated a booming interest among applicants to general surgery residency. Yet, despite the growing interest in global surgery in the academic world, there has been a little increase in the availability of global surgery opportunities for trainees.^{15,16} Our results demonstrate that the majority of global surgery opportunities for residents continue to consist of clinical rotations, while faculty are predominantly involved in short-term medical mission work, with only 24% of programs allowing for reciprocal rotations for LMIC trainees. This remains consistent with previous studies. A 2020 review of all ACGME-accredited general surgery residency program websites revealed that only 17% made mention of international clinical or research opportunities available to residents in training, typically limited to a one-to-two month clinical rotation at a partner institute outside of the United States.¹¹ This was not a significant change from a prior evaluation of resident opportunities in 2015 which found that 16% of residency program websites included information on global health opportunities.¹⁴

Our results demonstrated that funding and time away from rotations were the greatest barriers to global surgery opportunities, followed by insufficient faculty engagement, low institutional priority, a lack of dedicated leadership, and the COVID-19 pandemic. These factors likely have contributed to the lack of progress in global surgery opportunities at the institutional level. This is consistent with what has been reported in the literature for what faculty and residents perceive as barriers to global surgery engagement.¹⁷ Furthermore, specialties outside of surgery, such as obstetrician/gynecologist and anesthesia, also face similar barriers to engagement.^{18–20} The COVID-19 pandemic has created additional challenges to academic global surgical engagement, while also highlighting the need for sustainable global engagement. This has led to an evolving definition of global surgery with focus on the role of poverty and the built environment as determinants of access to safe surgical care globally, including within our own local communities.^{21,22}

Limitations

Although we used a listserv that was inclusive of all general surgery programs, we had a limited response rate of 17.5% from all programs. Thus, there is likely a selection bias towards residency programs with current global surgery opportunities or an interest in supporting global surgery initiatives. The overall availability of such programs for

prospective trainees may actually be a very small percentage of the total general surgery training programs. This would also impact how barriers are reported from programs, as we do not have a strong understanding of the barriers faced at programs without any global surgery initiatives. In addition, it is difficult to determine if there has been an increase overall in the number of programs with global surgery initiatives without knowing which programs responded in the past. There may or may not be overlap in programs from prior surveys and these programs.

Future Directions

There is currently no comprehensive database of global surgery programs for residency applicants, which makes it difficult for applicants to align their level of interest in global surgery education with their programs of interest. For applicants who seek more intensive global health training in residency, there needs to be a clear and efficient way to find programs that will support these educational goals. Several organizations exist to meet the needs of advocacy, research, and inclusion for students and residents interested in incorporating global surgery into their medical practices. The GSSA is a student-led national nonprofit that engages more than 2000 United States students and trainees in global surgery education, research, and advocacy through 60+ chapters at United States medical and dental schools and undergraduate institutions. GSSA is the United States national working group of the International Student Surgical Network (InciSioN)²³ and has spearheaded several initiatives including a mentorship database, multiple webinars on education, equity, and careers in global surgery, national research studies, and annual regional and national conferences.^{24,25} In an effort to support general surgery applicants who are interested in global surgery, GSSA teams are currently creating a database that will hold information regarding global surgery opportunities in general surgery residency programs. We hope to soon expand this to anesthesia, obstetrician/gynecologist, and all surgical subspecialties to provide a comprehensive resource encompassing the full global surgery spectrum.

In addition, we hope to see programs continue to transition to a more equitable global health model centering on bilateral, long-term, and reciprocal partnerships for trainees rather than continuing the current trend of isolated short-term medical missions. Global surgery has been shown to have numerous educational benefits for residents that align with competencies set forth by ACGME, such as learning to operate efficiently, exposure to surgical pathology, cultural competency, and forming interpersonal relationships.^{26,27} However, we cannot continue unilateral practices that solely benefit United States trainees both clinically and academically.²⁸ Inherently, a key to an equitable global surgery experience for any resident is learning from partnerships built on equal footing with intentional and meaningful benefits for all stakeholders.²⁹ Studies have shown that most residents interested in global work intend to do so as short-term engagements, which makes it all the more necessary that residency programs supporting global surgery work ensure residents train within equitable partnerships.^{30,31}

Moving forward, it will be important to more fully explore the barriers identified in this survey, especially with respect to funding and the evolving changes to the academic global surgery landscape brought on by the COVID-19 pandemic. Other qualitative research

methods, such as semistructured interviews, should be used to further characterize these barriers to expanding global surgery opportunities. While this study surveyed PDs, growth of these opportunities is also impacted by department-level prioritization and resource allocation. Thus, future studies should include both the department chairs making these decisions and directors of global surgery centers and programs who are most directly involved in facilitating the creation of these reciprocal partnerships.

Conclusions

Despite the significant increase in advocacy, published research, and interest in global partnerships from surgical trainees and medical students, the number of programs indicating global surgery involvement did not increase significantly from prior surveys.^{24,26,32} There is growing recognition within the field of global surgery of the importance of comprehensive, sustainable, bilateral collaborations that support upscaling of surgical infrastructure in LMICs; this stands in contrast to the many independent “silos” of short-term volunteerism that have previously dominated global surgery involvement by trainees from high-income countries.^{33–35} Despite this shift in approach, most surgical trainees are only able to participate in short-term medical missions to fulfill their global surgical interests and exchanges supporting trainees from partnering LMIC programs are few. In addition to serving as the basis for a public access global surgery database, this survey highlights the continued need for vocal leadership and institutional buy-in from residency organizations to meet current global health needs and bring United States training to the forefront of equitable practices by encouraging surgical trainees to become global citizens.

Funding:

BH was supported by award Number T32GM007753 from the National Institute of General Medical Sciences. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institute of General Medical Sciences or the National Institutes of Health.

Disclosures:

The authors report no proprietary or commercial interest in any product mentioned or concept discussed in this article. This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sector.

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Table 1.

Survey question and answer options from the APDS survey.

Survey question	Answer format
What is the name of your program?	Free text
What is your program's website?	Free text
How would you describe your program?	Academic, university-based Community Hybrid
Are there formal global surgery opportunities at your program? (Please choose all that apply)	Yes, clinical opportunities Yes, research opportunities Yes, advocacy opportunities No Other (free text)
Do you feel global surgery electives are valuable for residents?	Yes/No
Are there any faculty from your institution currently involved in global surgery? (Please choose all that apply)	Yes, involved clinically in global surgery
Are there residents from your institution currently involved in global surgery? (Please choose all that apply)	Yes, involved in global surgery research Yes, involved in global surgery education Yes, involved in short-term medical mission trips Yes, involved in global surgery advocacy
Do you have a global surgery fellowship program for postresidency training?	Yes/No
Are there opportunities for residents to get additional degrees (MPH, MPP, PhD)?	Yes/No
Do you offer any reciprocal global surgery opportunities for medical students, residents or faculty abroad? (Please choose all that apply)	Yes, medical students for short-term (1–2 wk) observerships Yes, medical students for long-term (1–2 mo) rotations Yes, residents for short-term (1–2 wk) observerships Yes, residents for long-term (1–2 mo) rotations Yes, faculty for short-term (1–2 wk) observerships Yes, faculty for long term (1–2 mo) rotations No Other (free text)
Do you have a formal center for global surgery?	Yes, it is dedicated to surgical needs Yes, it is housed within a center for global health No, but we have discussed and are looking into starting one No, there is no center at this time
Do you have any global surgery meetings or journal clubs? (Please choose all that apply)	Yes, global surgery meetings

Survey question	Answer format
<p>Which of the following do you think are challenges to global surgery opportunities for trainees at your institution? (Please choose all that apply)</p> <p>Which of the following is the biggest barrier to providing global surgery opportunities for trainees at your administration? (Please choose all that apply)</p> <p>Additional comments</p>	<p>Yes, global surgery journal clubs</p> <p>No</p> <p>Other (free text)</p> <p>Funding</p> <p>Time away from other rotations/ elective time</p> <p>Faculty engagement</p> <p>Not a priority with department/ program</p> <p>Low trainee interest</p> <p>Program leadership/mentorship</p> <p>Other (free text)</p> <p>Free text</p>

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Table 2.

Faculty and resident involvement in global surgery.

Experiences	# Of Programs (N = 45)	
	Faculty, n (%)	Residents, n (%)
Short-term medical missions	28 (62)	24 (53)
Clinical electives	22 (49)	17 (38)
Education	17 (38)	10 (22)
Research	12 (27)	13 (29)
Advocacy	14 (31)	8 (18)

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Table 3.

Barriers to providing global surgery experiences in residency.

Barriers to providing global surgery opportunities to trainees	# Of Programs (N = 45), n (%)
Funding	36 (80)
Time away from other rotations	28 (62)
Faculty engagement	14 (31)
Loa program or institutional priority	12 (27)
Lack of dedicated leadership	9 (20)
Low trainee interest	3 (7)
Difficulty with ACGME or ABS requirements	2 (4)
Difficulty with identifying LMIC partners	2 (4)
Time away from family	1 (2)

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