

ORIGINAL RESEARCH

Building a Sustainable Global Surgical Program in an Academic Department of Surgery



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Abstract

BACKGROUND Global surgery and volunteerism in surgery has gained significant interest in recent years for general surgery residents across the country. However, there are few well-established long-term surgical programs affiliated with academic institutions. The present report discusses the implementation process and challenges facing an academic institution in building a long-term sustainable global surgery program.

METHODS As one of the pioneer programs in global surgery for residents, the Icahn School of Medicine at Mount Sinai global surgery rotation has been successfully running for the last 10 years in a small public hospital in the Dominican Republic. The present report details many key components of implementing a sustainable global surgery program and the evolution of this program over time.

FINDINGS Since 2005, 80 general surgery residents have rotated through Juan Pablo Pina Hospital in the Dominican Republic. They have performed a total of 1239 major operations and 740 minor operations. They have also participated in 328 emergency cases. More importantly, this rotation helped shape residents' sense of social responsibility and ownership in their surgical training. Residents have also contributed to the training of local residents in laparoscopic skills and through cultural exchange.

CONCLUSIONS As interest in global surgery grows among general surgery residents, it is essential that supporting academic institutions create sustainable and capacity-building rotations for their residents. These programs must address many of the barriers that can hinder maintenance of a sustainable global surgery experience for residents. After 10 years of sending our residents to the Dominican Republic, we have found that it is possible and valuable to incorporate a formal global surgery rotation into a general surgery residency.

KEY WORDS global surgery, general surgery residency, international rotation

INTRODUCTION

The role of global health in medical education is rapidly growing. Many internal medicine and other primary care residency programs have well-established electives in resource-constrained

international settings for residents interested in global health. Global surgery and volunteerism in surgery has gained significant interest in recent years for general surgery residents across the country. Surveys of resident members of the American College of Surgeons have confirmed this growing interest.

Of the 724 residents who completed the survey, 92% were interested in an international elective and 73% were willing to participate even if cases were not counted for graduation requirements. In response to this growing interest, the Accreditation Council for Graduate Medical Education Surgery Residency Review Committee in 2011 established guidelines for global surgery electives in general surgery. Now 34 surgical residency programs offer a global surgery rotation, up from 23 programs just 5 years earlier.¹

For the last 10 years, the Icahn School of Medicine at Mount Sinai has had an ongoing monthly rotation for general surgical residents to the Dominican Republic (DR). In 2005, Mount Sinai was one of a handful of institutions that pioneered a global surgery experience for general surgery residents. Since that time, every postgraduate year 3 resident has gone through this rotation. This paper discusses the success and challenges facing an academic institution when building a long-term sustainable global surgery program.

Mount Sinai Global Surgery Program. The Icahn School of Medicine at Mount Sinai has developed a program in which general surgery residents in their third year of training rotate abroad in the DR. Since 2005, every one of our surgical residents has rotated for 1 month in the DR. This life-changing experience gives young surgeons the opportunity to provide surgical care to underdeveloped communities and to share knowledge and expertise with local physicians. Working with limited resources and without the comforts of most modern technology, they gain valuable skills assisting in the diagnosis and treatment of patients and providing much-needed care to an underserved population.

Before implementing this program, specific goals and objectives were established. These include (1) providing valuable service to a developing community and assisting with teaching and training; (2) acquiring operative experience in the setting of limited resources; (3) gaining cultural competency via a sustainable effort in health care development; (4) enhancing the spirit of humanitarianism and community for each participant; and (5) developing an exchange that will strengthen and mature over time, helping to make continuous strides to improve health care delivery systems in the DR.

After a thorough evaluation of 7 programs in different countries, the hospital chosen for this global surgery experience was the 250-bed public Juan Pablo Pina Hospital, serving a small urban

population in the town of San Cristobal, located in southern Dominican Republic. The hospital provides health care to a large population of underprivileged persons, both from urban and greater surrounding rural areas. The hospital is located in a safe and tenable environment and has very limited resources (no radiology department, no intensive care unit). The residents reported appropriate supervision in the operating room, with a trained local surgeon. Given the limited resources, most surgeries were performed using minimal equipment, few laparotomy pads, sutures, a suction device, and without electrocautery.² Since 2005, we have had 80 residents rotate through Juan Pablo Pina Hospital. They have performed a total of 1239 major operations and 740 minor operations. They have also participated in 328 emergency cases.

Evolution of the Program Over Time. Initially, residents resided in a home-stay setting, with a local family who provided a private room, food, and other necessities required for the residents' health and comfort. The residents were supplied with reading material, Internet access, and cell phone. Residents were overall satisfied with their home stay, which contributed to a sense of security, orientation, and acceptance within the community. Staying with a family also helped residents avoid isolation and depression. The family was given a nominal monetary supplement to assist them financially. By ensuring residents' safety and basic comfort, they reported a high satisfaction level and were able to perform in the local hospital efficiently. Two years ago, the home-stay model concluded because of structural changes in that family. A detailed on-site examination of other possible residential options was done. The hospital offered their on-call rooms as a possibility. A careful inspection of the hospital wing containing the call rooms was performed, including evaluation of their security, cafeteria, cleanliness, and Internet access availability. It was deemed a good option because it allowed residents to have quick and easy access to the emergency department during nights for surgical evaluation of patients. In addition, residents lived in the same area as other local medical residents who were on call. This fostered a sense of camaraderie and more opportunity to experience cultural exchange.

During the initial few years of this program, there were no surgical residents rotating through Juan Pablo Pina Hospital. Surgeons relied on medical students to assist in complex surgical cases. This gave the Mount Sinai residents an opportunity to assist and learn from highly proficient surgical

attendings. It also gave the residents a sense of purpose, because they were giving back to the hospital and community that was providing them with this global surgery experience. Over the years, the general surgery residency program in Santo Domingo started a surgical rotation at Juan Pablo Pina Hospital. Although this meant fewer cases for the Mount Sinai residents, it did allow US residents to interact and develop relationships with local surgical residents. It also gave them the opportunity to teach surgical residents topics and skills that are less prevalent in the DR. Local surgical residents expressed an interest in learning more laparoscopic skills, and as such, a Fundamental Laparoscopic Skills training box, along with a camera and laparoscopic practice instruments, were brought down to the DR. Mount Sinai residents demonstrated and taught local residents laparoscopic techniques, building capacity in their local counterpart.

DISCUSSION

In 2008, a nationwide survey of program directors of all 253 US general surgery residencies found that only 23 programs offered educational activities in global health and 18 of these offered clinical rotations abroad.³ By 2014, there were 34 programs across residencies.¹ It is clear that there is growing interest in global surgery among surgical residents, and surgical residencies are now eager to meet that interest with structured programs.^{4–6}

There have been various arguments regarding the merits of a global surgery experience for surgical residents. Most suggest these programs provide educational benefits, including improved clinical acumen, less reliance on diagnostic tests, exposure to a broad spectrum of illnesses, and increased cultural sensitivity. Some programs argue that a global surgery rotation is a good venue to supplement and increase exposure to cases under-represented at home institutions.⁷ Others are concerned about whether the quality of cases and training is commensurate with training at their home institution.⁸ We argue that the goal of the elective is not and should not be equivalent to training at our home institution. Our philosophy and main goal behind this program is to expose residents to practicing medicine in a limited-resource setting. We want our residents to have an experience that is very different from how surgery is practiced in the United States, and to carry that experience with them as they progress in their career. We want to build a sense of social responsibility and ownership in their surgical

training, and more importantly, in doctoring. Recent studies have found that participating in international surgical missions in plastic surgery residency significantly increases the likelihood of these residents to participate in missions as attendings. For plastic surgery residents with experience in global surgery during residency, 60% of the graduates participated in missions when in practice, compared with 5.9% of graduates who did not participate in missions as residents.⁹

Keys to Developing a Sustainable Long-Term Rotation. Despite the growing interest in global surgery, it is still very difficult to launch a formal global surgery experience for general surgery residents. Various studies in the past have examined barriers to developing a surgical rotation abroad. The most common cited obstacles are “lack of financial support,” “lack of available organized opportunities,” and “time constraint.”^{10,11}

Our program in the DR alleviates many of these restraints on an institutional level, thus allowing the program to become a sustainable long-term rotation. We have made this rotation a mandatory month for all postgraduate year 3 residents and have built this month into our yearly schedule. As such, residents do not have to find time on their own, during vacation time or elective time, to pursue this interest.

As global health activities develop and broaden in scope, program cost can become an increasingly important barrier to participation. Our department has established institutional financial support to make this rotation sustainable throughout the years. Other sources of funding can be obtained through national grants, institutional fundraising, and establishing a nonprofit organization status.

Another key aspect of the program that allows for sustainability is local leadership. The issue of supervision and mentorship is supreme and is often the rate-limiting step in resident’s overall onsite clinical experience. Many of our residents comment that their most enjoyable days are those spent with our designated local mentor, learning from him in the operating room and acting as his apprentice. Having a local champion not only helps anchor residents’ experiences, but it also facilitates building a solid relationship with the local institution. Our experiences over the past 10 years have highlighted the importance of a local champion in building a successful long-term surgical rotation.

Finally, to ensure a lasting global surgery rotation, we have learned that we must be able to adapt to the changing local environment. As discussed earlier, our

program has evolved over time as the local conditions have changed. Our residents now reside in a different living space, and they now share their operative time with local residents. Our local champion has also changed, and we re-evaluated our program and found a new local champion 2 years ago. These changes have their own advantages and drawbacks, but they were necessary to maintain and build on our existing program. This underscores the significance of performing routine evaluations on a program to determine how best to improve residents' overall experience.

CONCLUSIONS

More institutions are designing and implementing global surgery rotations for their general surgery residents. These programs must address many of the barriers that can hinder the maintenance of a sustainable global surgery experience for residents. After 10 years of experience sending our residents to the DR, we have found that it is possible and valuable to incorporate a formal global surgery rotation in a general surgery residency.

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