

Global Surgery Education within Canadian Medical School Curricula

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POSITION PAPER

Summary of Position

The emerging field of global surgery is a branch of global health that is gaining interest across the world. Over 5 billion individuals do not have access to safe and affordable surgical and anesthetic care (1). One of the main actionable components of tackling this inequity involves educating the international workforce to promote long-lasting change in these communities (1). Despite this growing need, global surgery education and training is lacking amongst North American students (2-7). Likewise, Canadian surgery residency programs have minimal formal curricula addressing global surgery and program directors rank global surgery as having little importance within their programs (3,4). Hence, the main objectives of this position paper are to advocate for the formation of formal global surgery curricula within all levels of Canadian Medical education, recommend for the expansion of global surgery elective opportunities, and recommend for institutional support for global surgery programs within residency. The CFMS aims to pave a pathway towards global surgery education within Canada so that future students may help train the surgical workforce of low- and middle-income countries as well as rural and indigenous communities within Canada.

RECOMMENDATIONS

Recommendation 1

The CFMS recommends the formation of formal global surgery curricula, promotion of conferences, expansion of research, expansion of advocacy, and expansion of elective opportunities.

Recommendation 2

The CFMS recommends the expansion of global surgery programs in residency while ensuring protected time, funding, and institutional support for participation in global surgery electives.

SUPPORTING EVIDENCE & RATIONALE

Supporting evidence for Recommendation 1

Canadian and international medical students are interested in global surgery but are dissatisfied with the opportunities available within their formal curriculum. The majority of their exposure comes from non-medical school resources. Conferences have shown to improve such exposure. Moreover, global health opportunities for medical students offer unique experiences that allow for familiarization with global health, enhancement of cultural competencies, and provide increasing interest towards the field.

Supporting evidence for Recommendation 2

Despite growing interest towards global surgery amongst residents, there are limited programs that explore the field. Those residency programs that do offer global surgery electives have issues with providing adequate funding, support, and protected time for such ventures. Engagement and satisfaction would increase if these issues are addressed.

INTRODUCTION & BACKGROUND

Global surgery is a “field that aims to improve health and health equity for all who are affected by surgical conditions or have a need for surgical care, with a particular focus on underserved populations in countries of all income levels, as well as populations in crisis, such as those experiencing conflict, displacement, and disaster (1).” This field is emerging as a critical component of global health and is rapidly gaining support across the world.

According to The Lancet commission’s 2015 report, over 5 billion individuals do not have access to safe and affordable surgical care (1). Likewise, the expenditure for such care is vast and places significant strain on the limited resources of low- and middle-income countries (LMICs) (1). Millions of necessary operations remain unanswered every year due to the inequities and inequalities that these countries face. Hence, the five suggested priorities that may be acted upon to decrease these inequities include: improving infrastructure, educating and supporting the international workforce, improving service delivery, helping with financing, and improving information management (1).

As a high-income country, Canada is in a privileged position to work towards reducing the gap in necessary surgical, anesthetic, and obstetric care both within our country and in LMICs. The inclusion of medical students and trainees in global surgery discussions and interventions is critical to scale-up efforts towards capacity-building in such surgical care. Hence, the CFMS aims to tackle these inequities by educating and supporting the international workforce to ensure long-lasting change within these communities.

Although there is rising interest amongst Canadian medical students and residents to be involved in global health and global surgery, there are limitations in the necessary education, skills, and training to address this growing need. For example, following a survey of Canadian Medical students who participated in the 2011 Bethune Round Table, there was significant dissatisfaction amongst medical students with regards to their current global surgery education and opportunities (2). At the same time, Canadian surgical residency programs are limited in their exposure to global surgery education and opportunities as well (3,4). Moreover, the lack of global surgery education with the medical education system is not limited to Canada (5–7). As a result, the goal of this paper is to bring global surgery into the spotlight of Canadian medical education to help pave the way for Canadian involvement within this sphere of global health.

KEY PRINCIPLES

1. Global surgery is necessary to address inequities and inequalities faced by LMICs and underserved areas in Canada.
2. As a high-income country, Canada is in a privileged position to work to reduce the gap in necessary surgical, anesthetic, and obstetric care both within our country and within low- and middle-income countries.
3. There is growing interest and demand for global surgery education amongst medical students and residents which would help address the aforementioned inequities, however, such formal training and opportunities are lacking.
4. There is a lack of funding, protected time, and institutional support for residents and in some instances, physicians, for participating in global surgery.
5. Increasing access to global surgery education along with proper funding and protected time for medical students and residents will help train Future Canadian physicians to in-turn empower the workforces of LMIC and underserved Canadian areas to reduce the inequities and inequalities of surgical access.
6. Ultimately, such education initiatives will reduce the gap in care through academic partnerships, educational and research opportunities, and bilateral support where trainees from LMICs are also prioritized.

RECOMMENDATIONS

1. The formation of formal global surgery curricula, promotion of conferences, and expansion of elective and research opportunities

Concern 1: Interest in global surgery is increasing amongst Canadian medical students yet this has not been addressed by adequate global surgery education within the undergraduate medical education curriculum

Concern 2: Despite the benefits of global surgery clerkship electives, there is minimal research examining such electives and their availability within Canadian medical schools

Recommendation 1: Undergraduate Medical Education administrations should incorporate formal global surgery education opportunities within pre-clerkship and clerkship curricula.

Recommendation 2: Undergraduate medical education administrations should promote, support, increase funding, and raise awareness to global surgery conferences.

Recommendation 3: Canadian medical schools should expand the availability of global surgery electives for senior clerks, collect data, and publish research articles examining the production of such electives. They should ensure that such electives are ethical so that senior clerks are not overstepping their level of competence.

Supporting Evidence & Rationale

Global health is one major branch of the CFMS mission designed to address the growing need for coordinated programming and collaboration regarding health equity and social justice in Canada and abroad. Global surgery is an emerging field within the broader scope of global health, and the CFMS' and Canadian medical education system's position regarding this area remains largely unexplored.

Despite growing demands for global health amongst students, Canadian medical school curricula regarding global health are disjointed and inadequate to address such needs. Specifically, Canadian medical schools vary widely in their approach to global health and there is no consensus on the material their curricula should cover, global issues to be taught, how much training is needed, or what constitutes adequate global health exposure in terms of elective opportunities (8). An analysis of global health concentrations in Canadian medical schools also indicated that the majority of schools have yet to develop formally structured concentration programs as well (9). As an emerging subfield of global health, global surgery equally has not yet been incorporated into medical education.

While these studies were published 14 and 7 years ago, respectively, this issue has only prevailed, especially within the context of global surgery. To illustrate, one study following the 2011 Bethune Round Table demonstrated that medical students were strongly dissatisfied in their learning of global surgery (2). The Bethune Round Table is an international conference held annually in Canada which addresses global surgery issues within LMICs. Similar to the global health study, medical students felt as though their exposure to global surgery was greatly limited within formalized medical education (2). However, they found that participation within the conference greatly elevated their knowledge with regards to the field (2). Thus, raising awareness to such global surgery conferences and providing opportunities for students to attend will help reduce the gap in global surgery education. It is pertinent to note that global surgery encompasses increasing access to underserved communities, including northern, rural, and indigenous communities within our own country. Post-operative outcomes were found to be worse for indigenous Peoples in Canada and they encounter greater barriers in accessing surgical procedures (10). Yet, similar to before, students report strong interest in Indigenous health but feel that their education and preparation in working in such communities is severely lacking (11). As a result, it is important for Canadian medical schools to create formalized curricula that raises awareness and educates students on the role of global surgery internationally and within underserved communities in Canada.

These perspectives are not only prevalent amongst Canadian medical students but they are present amongst North American and international medical students. In an American study spanning 18 medical schools, 66% of medical students expressed interest in global surgery, yet 79% reported that global surgery was rarely addressed in their curricula (7). Similarly, an international survey of medical students demonstrated that interest is high amongst medical students, however, their exposure is limited (6). In fact, participants relied on non-medical school resources to gain exposure to the field. Moreover, knowledge gaps exist regarding global surgery. For example, John Hopkins medical students perceived surgical care as the least preventative and cost-effective measure compared to other global health measures, contrary to literature and evidence (1,5). As a result, it is key to address the lack of global surgery education with Canada by forming a standardized curricula within undergraduate medical education, promoting conferences and other learning opportunities, and paving a pathway to not only help Canadian students, but North American and international students as a whole.

While some studies have explored global surgery education, research studies are lacking with respect to the availability of global surgery electives within preclerkship and clerkship settings in Canada. Global health electives for medical students offer unique experiences that allow for familiarization with global health, enhancement of cultural competencies, and provide increasing interest towards the field (12,13). Hence, it is important that Canadian medical schools expand their offerings of global surgery electives and alternatives for senior medical students while also researching and publishing various elective strategies for future classes and beyond.

2. Expansion of global surgery programs in residency while ensuring protected time, funding, and institutional support for participation in global surgery electives

Concern 1: Despite growing interest in global surgery by Canadian residents, there is a lack of adequate global surgery training, formal global surgery programs, and awareness of global surgery elective opportunities

Concern 2: While resident physicians would like to participate in global surgery electives, there are major barriers to participation due to time constraints, financial concerns, and lack of institutional support

Recommendation 1: Postgraduate residency programs should expand formation of global surgery programs to increase training in global surgery while raising awareness to electives available.

Recommendation 2: Residency programs should ensure protected time for partaking in global surgery electives without sacrificing their vacations, provide adequate funding for such ventures, and ensure that their residents are supported throughout the process.

Supporting Evidence & Rationale

Formal global surgery programs are limited within residency training, and postgraduate medical education regarding global surgery is lacking as well despite high interest amongst Canadian residents. Of 17 general surgery residency programs within Canada, only 3 institutions have formal curricula in global surgery while 9 have an Office of Global Surgery (3). At the same time, Program Directors (PDs) ranked global surgery as of little importance to their programs (3). Likewise, there is a lack of specialized global health training within Canadian obstetrical and gynecological programs (4). Furthermore, despite high interest in global surgery, surveyed Canadian neurosurgery residents had low participation in global neurosurgery initiatives. Notably, they felt that participation and knowledge could increase if there were a formal global neurosurgery program created within their residency program (14). Hence, similar to undergraduate medical education, postgraduate exposure to global surgery is limited and the formation of formal global surgery programs within each residency program can help to bridge this gap.

While it is important to expand global surgery programs, residents indicate that there are various barriers to such electives aside from availability. These include time constraints and financial support (14–17). When surveyed, neurosurgery, general surgery, and orthopedic surgery residents report that there is a lack of time for participating in such electives (14,17). A minority of trainees use their vacation time to participate in global surgery electives (14,17). Likewise, neurosurgery and otorhinolaryngology residents often use personal funds to cover their expenses when participating in LMIC electives (14,15). This is not exclusive to Canadian residency programs. One study of Yale residents and faculty demonstrated similar

barriers to participation in global surgery electives: citing lack of funding, protected time, and institutional support for such activities as barriers (16). These findings indicate that it is important not only to expand global surgery programs, but to ensure that proper funding, protected elective time, and institutional support is in place to promote global surgery within residency.

ADVOCACY PLAN & FOLLOW-UP STRATEGY

Immediate Follow-Up Plan

The major advocacy targets and/or stakeholders required for the implementation of this paper include **medical school deans** and **residency program directors**. The immediate follow-up plan would consist of:

1. Surveying Canadian medical students and residents to assess their perspectives on the adequacy of global surgery education and training that they receive.
2. Surveying Canadian medical school deans and residency program directors (surgery, anesthesia, OB/GYN) with regards to their perspectives on global surgery and the availability of such electives within their school and residency programs.

Long-Term Implementation Strategy

1 year goal & action plan:

1. Use prior survey results to advocate for increasing global surgery opportunities and electives within undergraduate and postgraduate studies while ensuring such opportunities are ethical in nature
2. Track the number of publications and research articles addressing global surgery education within Canada to evaluate if any change has been made to opportunities and funding in the field
3. Annually track the number of schools engaging in formal global surgery curricula within pre-clerkship, clerkship, and postgraduate studies
4. Annually track the number of global surgery conferences being offered in Canada and survey students who attend such conferences

2-5 year goal & action plan:

1. Bi-Annually repeat prior surveys regarding medical student and resident perspectives on global surgery and improve upon implementation and advocacy as needed
2. As global surgery curricula becomes more formalized, advocate for the establishment of partnerships between NGOs, LMIC government entities, and residency programs to allow for opportunities to train the surgical workforce of LMIC
 - a. This is the ultimate goal of providing global surgery education within Canada

CONCLUSION

As a high-income country, Canada is in the privileged position to help local underserved populations and LMIC by educating their surgical workforce. Despite growing interest in global surgery, medical students and residents lack the necessary skills and education to address this need. The goal of this paper is to help lay the foundation for a formal global surgery curriculum within Canadian medical schools to increase exposure and interest in the field. Likewise, the goal of this paper is to advocate for increased awareness, funding, and institutional support for global surgery electives within residency.

Given the state of Canadian global surgery education, emerging physicians are unable to meet the Lancet's goals of training the international surgical workforce. By addressing the root of the problem, the CFMS hopes to create foundational skills that will cause early exposure, creation of partnerships, and layered education that will eventually lead to the country using its position to help those in need. However, this will not be possible without formal programs due to the danger of inexperienced physicians causing more harm than good. Hence, the CFMS would like to present this position paper as the first of its kind in the field of global surgery to lay the groundwork for global surgery education within Canada.

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