Chapter 11
Developing Educational Opportunities for Trainees on Both Sides

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Ideally, the development of educational opportunities in global surgery addresses learning objectives for participants from both High Income Countries (HIC) and Low-Middle Income Countries (LMIC). Historically speaking, HIC have offered some undergraduate and postgraduate training opportunities to individuals from LMIC. However, in the context of "medical missions", trainees from HIC typically gain easier access to LMIC, with little reciprocal benefit for trainees from their host countries. Also, given that many doctors from LMIC have not returned home after training in HIC, the overall benefits of training has been heavily weighted in favor of participants from HIC.

Trainees from LMIC often face a highly regulated set of conditions when visiting HIC. These regulations tend to focus on patient safety and liability protection for the HIC host institution. Consequently, the participation of visiting trainees from LMIC is usually limited to observation only, with few opportunities for practical experience. Therefore, when planning visits for participants from LMIC, consideration should be given to optimizing their experience. While the environment may not allow full participation in clinical activities, other valuable educational opportunities can be planned and instituted.

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In designing new educational partnerships between HIC and LMIC, there exists the risk to perpetuate the inequity and imbalance in medical workforce that underlies many existing arrangements. While complete equity may not be possible at this juncture, there is a growing movement to shift the paradigm, and seek greater transparency, clearer objectives, and ultimately, programs that address educational wants and needs for interested parties from both resource rich and resource restricted environments.

While we strongly advocate truly bilateral exchange visits in which trainees from both sides participate fully in clinical activities, such arrangements are limited at present. Rigid licensing requirements, accreditation agencies, and medico-legal norms in HIC effectively check the activities of visiting LMIC trainees. However, such protections are not always available to the vulnerable patients and local trainees from LMIC when they receive trainees from HIC. The following discussion assumes that the visiting trainee is from a HIC while the host site is in a LMIC, and focuses on how such visits can provide meaningful benefits to both sides.

Educational Opportunities for Trainees from HIC

(i) Learning surgery in an environment with a different teaching system, training pattern and ethical considerations

The participants from HIC will experience the host country's models for teaching and training. They look to focus on and learn what they perceive as most important: acquisition of traditional cognitive knowledge and psychomotor skills. They may recognize that these differ from those in their home country, but are most apt to concentrate on what they feel will transfer to their resource rich context. This acquisition of traditional knowledge and skill may occur in clinical conferences and meetings, on the wards, in the operating theatre or in a multitude of clinical settings. However, not least important is the learning which reflects the local culture and ethical values. These insights into systems-based issues and differences in practice are perhaps the most important lessons learned during such experiences.

Depending on the environment, the emphasis may be more on ensuring patient survival than on improving the quality of life. This reality in certain resource restricted environments needs to be highlighted. The local trainers who serve as mentors to the trainees will provide insight based on the same body of knowledge available to colleagues in HIC, but tempered by personal experiences and preferences in the management of surgical conditions in their resource restricted environment. The trainee will also have peer learning opportunities while interacting with the local residents at various clinical/academic forums.

Complementary formal teaching sessions could further improve the overall capacity of the visiting trainee to understand the processes from a new perspective of limited manpower and limited resources. Many stakeholders from HIC recognize that well established bedside teaching methods that are utilized in LMIC are

becoming extinct in resource rich environments. Formal efforts are being made to re-establish traditional bedside teaching rounds in many resource rich environments, largely based on experience from time spent in a LMIC. Another change in behavior by the trainee from HIC may be a shift in attitude towards greater resource efficiency. This is often the result of experiencing the constraints imposed by limited resources in LMIC, and may impact their practice upon return to their home country.

There is a growing awareness that while formal learning objectives may focus on the previously mentioned traditional criteria based on knowledge and skill, some of the most valuable lessons are learned in realms of communication, collaboration, professionalism, health advocacy and systems-based practice. Recognition of this concept as a whole, and the focus on tailored preparation will assist in appropriately sensitizing and preparing the trainee for the new context in which they will find themselves, and will help focus and maximize the learning experience.

Point of Caution
An overseas rotation may not be ideal for every resident. Residents from both HIC and LMIC are more likely to thrive in a foreign setting if they exhibit the cultural sensitivity and situational awareness necessary to facilitate a smooth transition from one environment to another. Therefore, in selecting residents for these rotations, especially early on, program directors should prioritize those with these qualities. A formalized preparation should be considered prior to arrival at the host site.

(ii) **Opportunity to exchange knowledge and skills with trainees in the host country**

The expectation is that the trainee from a HIC will integrate fully into the training structure of the host institution and therefore will readily provide information about perspectives in their own country. The presumption here is that the visiting trainees from HIC will be sufficiently advanced in training to participate more effectively in clinical care at the host site. The acceptable level of training is a matter to be carefully considered during the planning stages. In some situations, visiting trainees will encounter host LMIC peers with superior knowledge and skills. It is not unusual to find trainees from LMIC who have unique insights into local diseases, honed through reliance on clinical skills and adaptation to the scarcity of modern technology. For instance, trainees from HIC, accustomed to minimally invasive procedures, could have much to learn from their LMIC counterparts who may have more advanced open surgical skills. In many situations, both the visiting and host trainees and faculty can scrub together and learn from each other. These opportunities to exchange knowledge and skills with local trainees may also bring to the fore previously undeveloped leadership skills of the visitor, and help foster a spirit of collaboration and understanding. A sense of both humility and camaraderie on both sides can foster a positive learning environment for all. The exchange of knowledge can take place in the operating theatre as above, or through planned presentations made during formal clinical meetings and rounds, or even during informal bedside teaching. Careful planning, adequate supervision and close

monitoring from a dedicated local stakeholder and a thoughtful HIC organizer are therefore imperative.

Of particular importance, learning opportunities for trainees in the host LMIC must never be compromised by the visiting trainee. Rather, a plan should be made long in advance as to how the visitor can benefit the people (patients and trainees), and the environment. A clear understanding regarding the level of training and competence required of the visiting trainee will offset potential problems. Adequate preparation, with clear goals and objectives from the outset, will lend greater transparency to the collaboration. This preparation may also include an orientation regarding the role of the visiting trainee, focusing on interactions with patients, local trainees and faculty.

Point of Caution
It is not acceptable for visiting trainees to be placed in positions of responsibility for vulnerable patients that exceed their cognitive or technical abilities. It is therefore expected that these trainees will provide patient care under adequate supervision. Many HIC residency programs do not have the resources to provide visiting faculty for on-site supervision of their residents for the duration of the trip. A collaborative model in which local faculty are integral to the process and where multiple visiting HIC institutions agree to share faculty to spread out coverage could ensure the on-site presence of at least one HIC and LIC supervising faculty surgeon at all times.

(iii) **Acquisition of knowledge in the management of surgical conditions prevalent in the host country**

The HIC trainee, in the course of his/her visit, will come across a number of surgical conditions (e.g. surgical complications of infectious diseases) that are unique to the host country, or are uncommonly encountered in their home country. This will provide first hand in-depth information on the natural history and pathophysiological processes of such diseases and may also serve as an avenue to improve on their clinical skills. Patients presenting with advanced stages of surgical diseases will afford the visiting trainee opportunities to acquire more knowledge and foster greater understanding of disease and health care implications outside their home environment.

(iv) **Establishment of networks that could translate to future research collaborations**

During the time spent at the host institution, the trainee may observe diseases, conditions, patterns of care, or other local practices that may inspire research ideas. The relationships and network established during the visit could create a framework for future research collaboration. Such research opportunities can commence while the visiting trainee is still at the host country or form part of future collaborations, and even partnerships, after returning to their home country.

Point of Emphasis
It is important that any research projects to be undertaken are locally relevant and mutually beneficial, in the spirit of true collaboration, with shared responsibility and authorship.

(v) **Development of an interest in Global Surgery as a career path**

The HIC trainee visiting a LMIC institution has the opportunity to appreciate the value of surgery as a public health tool. An understanding of the cultural, social and economic determinants of surgical diseases will foster informed diagnostic and therapeutic decision-making, based on local resources. Daily struggles with poor infrastructure, limited supplies, and inefficient allocation of resources will likely be encountered by the trainee. Also, trainees from HICs who have become accustomed to limited work hour rules will discover that their counterparts in the host countries still work much longer hours for significantly less salary. The approach to ethical and medico-legal issues in the host country may contrast with practices in their home HIC, and create an awareness regarding the differences in systems-based practice. All these experiences may serve as a spring board that will propel the trainee towards developing an interest in global surgery as a future career path.

Educational Opportunities for Trainees from LMIC

(i) **Exposure to different modules and methods of teaching and practice**

The host-country trainees, while interacting with the visiting HIC trainee, may notice differences of opinion and of approaches to surgical practice such as the routine use of management protocols, standard operative procedures and the reliance on checklists to ensure safety. Discussions on different investigative and treatment methods such as the multidisciplinary approach to patient care and the ever expanding role of minimally invasive surgery may result in the integration of these methods into the local surgical practice as deemed appropriate. Such exchange of ideas may lead to a modification of LMIC training modules to adopt the highest quality and most contextually appropriate practices.

Point of Caution Sensitivity to the local environment is paramount here: terminology such as "best practice" may be used, so long as we recognize that what may be best in one environment, may not be practical in another. A thoughtful process involving dialogue and exchange of ideas/information will allow local stakeholders to decide what is appropriate, and what is not.

(ii) **Development of goals or benchmarks for training**

The host trainees may receive a morale booster when they discover the many similarities between their training and that of the visiting trainee, especially in the realm of knowledge base and clinical acumen. Discussions on training requirements and career progression with the visiting HIC trainee may create a desire to re-assess the structure of their local training. This could entail more formally defined goals and benchmarks which will serve to determine progression and promotion.

The more formalized concept of mentorship and the problem solving approach to patient care in the HIC may be contextualized and eventually incorporated into the training structure of the host country. These may well already exist in a locally

contextualized format, but due to resource and manpower constraints, are not as ubiquitous as they are in resource rich environments.

Point of Emphasis
This is a process that requires a dialogue with local stakeholders: otherwise, the risk is that well-meaning visitors may establish programs that are not contextually relevant.

(iii) **Fostering of professional relationships for further training and research**

Personal and professional relationships will invariably develop between trainees of the host institution and the visiting trainee. This may take the form of joint research opportunities or lead to the establishment of collaboration between both institutions, perhaps in the form of simultaneous web based conferences or seminars. An offshoot of these activities could serve as a basis for the development of an exchange program between the host country and the HIC institution of the visiting trainee. These will surely improve the quality of both the host institution and the HIC hospital. An example is the International Association of Student Surgical Societies (IASSS). This began as a group to support medical students who had an interest in surgical specialties at the University of Cape Town, South Africa. It was recognized that such a grass roots movement may help provide the answer to the surgical manpower needs in other LMIC. With the assistance of strong local mentors, and external mentors from HIC, the program expanded across the entire southern African region. Stakeholders from HIC have since joined, with the understanding that the program is owned and operated by the LMIC stakeholders. Collaborative efforts in research and education are in progress.

Regulatory Aspects of HIC Global Elective Rotations

Both the American Board of Surgery (ABS) and the Surgery Residency Review Committee (RRC) of the Accreditation Council for Graduate Medical Education (ACGME) have approved a mechanism for overseas rotation to count towards the requirements of general surgery residency training in the US. The stipulated requirements are to ensure that global elective rotations are based on a defined educational rationale with competency-based objectives. A major barrier for most institutions is the requirement that they provide salary, travel expenses, health insurance, and evacuation insurance for their residents who participate in global rotation. A Program Letter of agreement (PLA) is required that clearly defines the responsibilities of both the home and host institutions. A key tenet of the rules is that on-site supervision of residents will be performed by American Board of Medical Specialties (ABMS)-certified faculty, and allows for residents to be supervised by faculty from other institutions through a collaborative arrangement. Programs must provide verification that residents will participate in outpatient clinics and continuity of care related to any operative experience (pre-, peri-, and post-operative care). Approval

of these rotations also requires demonstration that the host institution has a level of infrastructure and ancillary services that will support an optimal educational experience, including housing, transportation, communication, safety, and language.

Developing Education Curriculum for LMIC Setting

Curriculum development is a continuous process in which mutual trust and joint decision-making regarding what constitutes priorities must be had. In the context of Global Surgery, there are two main curricula to be addressed. The more formal curricula are those established for LMIC trainees in their respective environments. The less formal curricula are those established for visiting or elective trainees rotating from HIC to LMIC. In both cases, the stakeholders from LMIC must ensure local ownership with a view to establishing a relevant curriculum. This is self-evident when discussing the formal curriculum in the local environment. However, it should also be the case in establishing a curriculum for trainees visiting from HIC, and should span all spheres of surgical education, from cognitive and technical expertise, to systems-based practice and professionalism. The key is *contextual* relevance. Regardless of which of these curricula we are addressing, a thoughtful collaboration between stakeholders can help foster a mutually beneficial relationship with the ultimate goal to establish the most appropriate curriculum possible.

When discussing the curriculum for HIC trainees on elective in LMIC, a collaboration between stakeholders from resource rich and restricted environments is paramount. Because these trainees are subject to demands of the home program but need to be accountable in the programs they visit, the task is very complex. Consideration towards incorporation of academic principles into clinical rotations, as outlined previously, and methods for HIC residents to monitor their outcomes should be made. Additionally, as trainees from HIC stand to learn a great deal from the cultural, religious and environmental factors that shape differing senses of value, these concepts should be incorporated into their learning. In designing these curricula, there are no substitutes for thoughtful mentors from both their home and host environments.

When discussing the curriculum of the host LMIC, training needs should be identified. Emphasis will be placed on tried and tested training and teaching methodology that is deemed appropriate to the environment. While the introduction of novel ideas and techniques may be discussed, local stakeholders must decide what is appropriate. Non-technical aspects of training such as professionalism, safe surgery and ethics need to be included as these may be overlooked in the curriculum of some LMIC. Having said this, there are many lessons to be learned regarding the evolution of the ethics and decision making in the host country environment. There is an emerging body of literature on the Eurocentric concept of ethics and decision making, and its relationship with other cultures. We must recognize that these concepts and values are not singular, and may not even be the most appropriate in a given context. The guiding principle and overarching goal must remain the interests

of the local trainees and their patients; these should be the driving forces in the development of such a curriculum.

Structuring the education for LMIC trainees into modules with clear, achievable goals, and timelines, may improve its quality. Benchmarks by which the progress and quality of training in host institutions can be measured such as number of cases performed, research, and academic output should all be considered and incorporated as indicated into the curriculum. Involvement of local and regional professional training and regulatory bodies (e.g. the West African College of Surgeons-WACS, and the College of Surgeons of East, Central & Southern Africa-COSECSA for sub-saharan Africa) and other regional surgical societies may also help to domesticate the curriculum and improve the chances of being adopted by regional training institutions. Some governments and training bodies in LMIC are considering the introduction of a 1 year training abroad for all postgraduate doctors; this policy can be expanded to include the regular exchange visits by HIC trainees to their respective LMIC which could further ensure continuity of an international collaborative program.

Monitoring and Evaluation of the Program

To ensure maximal benefits and continuity of a viable global surgery initiative, mechanisms of monitoring and evaluation should be put in place from the outset. This involves those at the level of institutions that send and receive trainees, and also at the higher level of professional bodies, and associations which serve as auditing bodies. As discussed earlier and repeated here for re-emphasis, pre-departure preparation with clearly established rules and objectives should be drawn up and formally discussed. Assigned mentors on both sides should help ensure that goals are worked towards and achieved. The establishment of global surgery organizations that appropriately represent stakeholders from both the resource restricted and resource rich environments could assist in initiating, maintaining and evaluating the program. These international organizations such as the Association for Academic Surgery (AAS) present a common platform from which institutions and individuals from both HIC and LMIC can interact and establish collaborative projects. Periodic assessment of stated goals and of the progress of the program must take place.

Conclusions

The development of educational opportunities, regardless of the context or level of training, requires a thoughtful process at the best of times. This is all the more complex in the global setting because we are adding a relationship between parties with different cultures and resources; and the differences do not stop there! No two programs need look the same; rather, they should be tailored to the LMIC and HIC

stakeholders involved, and to the operative context. We should not shy away from the time and effort required to establish worthwhile opportunities for trainees "on both sides", with the goal to create a common front. Ultimately, we should strive for a setting where all the involved parties capitalize on shared strengths, learn from past mistakes, and strive for programs based on honesty, integrity and transparency.

Suggested Reading

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