The Role of Inter-Institutional Cooperation In Surgical Training and Practice: A German-Tanzanian Model.

Sebastian Freudenberg[1], Charles Mkony[2], Torsten Wilhelm[3], Stefan Post[4].

[1]Consultant Vascular and Visceral Surgeon, [1]Department. of Surgery, University Hospital Mannheim, University of Heidelberg, Germany, [2]Associate Professor of surgery and Consultant General and Urological Surgeon, Muhimbili University College of Health Sciences, University of Dar es Salaam, Tanzania. [3]Resident in Surgery, [4]Professor of Surgery, Consultant in General, Hepatobiliary and Vascular Surgery, Department. of Surgery, University Hospital Mannheim, University of Heidelberg, Germany.

***Correspondence to*:** Prof. Charles Mkony, Dept. of Surgery, MUCHS, University of Dar es Salaam, P O Box 65001, Dar es Salaam, Tanzania. E-mail: cmkony@muchs.ac,tz

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Objective: To highlight the feasibility and importance of inter-institutional cooperation, particularly between countries of the north and south, in improving and maintaining standards in medical training and practice.

Setting and sources: A four-year academic exchange program was set up between the departments of Surgery at Muhimbili University College of Health Sciences, Dar es Salaam, Tanzania, and the Mannheim Faculty of Medicine of Heidelberg University, Germany.

Methods: Contact was first initiated between the heads of department at the two institutions and communications was almost entirely through e-mail. A Memorandum of Understanding between the two institutions was prepared and signed. The program was sponsored by the German Academic Exchange Service (DAAD), and involved exchange of teaching material, diagnostic equipment and 30 students, residents and surgical teachers between the two institutions over the 4-year period. A number of research projects were also initiated between the two departments.

Conclusion: Academic Exchange programs between institutions in developed and developing countries can provide badly needed technical cooperation and valuable experiences for students and staff from both sides of North-South divide in addition to forging lasting professional and personal relationships between those taking part in the exchange programs

Background

Following their inception as free states some five decades ago, most African countries had no more than a handful of surgeons, usually trained in the developed countries. With virtually no surgical training facilities in the newly constituted states, a few surgeons continued to be trained abroad every year, complemented by a small number of foreign nationals, mostly from the former colonial power. Gradually these newly independent states developed their own training facilities as well as a sense of nationalism and self-esteem. Currently most of these countries educate and train their own surgeons in their own institutions. These feats are accomplished under conditions of great resource scarcity and the pressure of a global economic system that is not particularly friendly to the poor[1].

Surgical training in the rich North is still regarded highly and valued by many in developing countries, and certainly may have high returns for both the surgeon and his or her patients. But apart from being expensive, such training often promotes the emigration of those trained abroad, given the attractive living and working conditions of the developed world. They also provide training that may not always be optimal or appropriate for the trainee's working environment in his or her home country. Providing appropriate support to surgical training in developing countries, on the other hand, is not only likely to highlight those skills most useful to local needs, but will have a higher multiplier effect, training larger numbers of trainers and reaching more students. Such programs can also better adapt to the local curriculum, and over time, to the emerging needs of the national health system.

The qualification and competence of surgeons trained in resource-poor settings continues to raise concern[2,3,] and the need for postgraduate training programs to develop specialized surgical skills increases in parallel to the rapid advance of surgical technologies. In consonance with such needs, the Millennium Development Goals stress the importance of delivering general health services to the poor, and developing sustainable health (and health training) systems. And yet health aid to poor countries is increasingly targeted at specific health needs, usually in public health, such as vaccine

development for infectious diseases. While efforts like the Global Fund for AIDS, TB and Malaria, are vitally important to health in poor countries, they must be complemented by programs that promote general clinical and surgical skills, motivate health professionals, and raise standards of care. Surgery remains a cornerstone of primary medical care, and the training and career development of surgeons can be pivotal to the adequate and timely provision of emergency care.

Medical schools in developing countries are faced with the difficult task of providing modern surgical care with a minimum of resources. Many small medical faculties will not have the necessary financial and personnel resources to keep up with the rapid advances in professional information. Developments in modern medicine, medical techniques and high-tech medicine published in leading journals and presented at international conferences do not meet the interest and needs of surgeons in developing countries. On the other hand, surgical units in resource-poor medical faculties would greatly benefit from staff training in specialized, sometimes relatively basic techniques. Such training often requires no more than a few months duration, but is unavailable in poor countries. It can make a great deal of difference in terms of professional satisfaction of the staff, improved health care for the population and saved revenue when patients no longer need to be referred abroad for treatment.

Electronic mail and web-based professional resources have made it easy for professionals to communicate and to access information virtually anywhere in the world[4] as long as a computer and a telephone line are available. But physical practical training will still be essential to develop advanced surgical skills[5,6]. Such training may be provided during clinical attachments or workshops abroad or, preferably, by visiting surgeons in institutions in the South.

When considering academic cooperation and exchange programs between North and South, it is important to remember that the Southern countries are a very heterogeneous group, with substantial differences between them in levels of development, and that South-South cooperation can also be mutually beneficial. The South Commission Report[1], compiled under the chairmanship of former Tanzanian President and statesman of world renown, Julius Nyerere, underscored the importance of South-South cooperation in general, from which parallels can be drawn for cooperation in the medical field.

The Mannheim – Dar es Salaam Surgical Exchange Program

A four-year cooperation program in medical education with a focus on surgical training was established in 1998 between the Department of Surgery of Muhimbili University College of Health Sciences of the University of Dar es Salaam, and the Department of Surgery at the University of Heidelberg Teaching Hospital in Mannheim, Germany, supported by the German Academic Exchange Service. A brief e-mail contact initiated a cooperation that has resulted in the exchange of medical students, surgical trainees and teachers involving 30 individuals between the two institutions.

Final year students from Tanzania and Germany were able to attend medical school in Mannheim and Dar es Salaam, respectively. Specialist training for surgeons from Tanzania was offered in Germany, and German surgeons practiced for short periods in Tanzania, and, through the program, specialized ultrasound diagnostic and therapeutic techniques have been established at the Surgical Department at Muhimbili.

The medical student exchange program focused on a personal partnership between two final year students. For example, a German student hosted a student from Tanzania and assisted her/him in attending medical school in Mannheim before visiting the University of Dar es Salaam in a subsequent school term where the Tanzanian student was the hostess or host. The average duration of visits was two to three months.

The exchange program for surgeons was meant to provide training for surgical specialties and to help establish or develop such specialties in Dar es Salaam. This program worked on a personal partnership basis as well. Techniques of vascular surgery, for instance, were presented during workshops in Dar es Salaam using prosthetic materials. Participants in the workshops learned basic vascular surgery skills and subsequently picked up clinical surgical skills during operations performed with specialists from Mannheim as instructors. There were further learning opportunities for young Tanzanian surgeons with interest in vascular surgery during several months of a clinical attachment at the University Hospital, Mannheim.

The other side of this exchange has been the opportunity provided to German surgeons to

experience surgery as it is taught and practiced in the resource-scarce conditions of the developing world. For German surgeons it was a worthwhile experience to learn that surgery is also possible, and with good results, under low-resource conditions Such an experience imparts critical skills in surgical improvisation that are too often undeveloped in the increasing dependence on high technology, and standardization in the North.

From our experience, we would argue that surgeons who have worked under low-resource conditions are better able to manage difficult and exceptional conditions that arise during surgery. In poor countries surgeons are frequently dealing with neglected disease and therefore learn to cope with more advanced pathologies. Experience of surgery under conditions with limited infrastructure, and materials also leads a surgeon to better discern the value and cost-effectiveness of alternative options within the Northern health system, in which economic realities are leading health care providers increasingly to take critical views of cost-effectiveness of health care interventions.

A senior Tanzanian surgeon with some basic knowledge in Ultrasonography spent six months of intensive training in Germany under the exchange program, which also facilitated the purchase of a compact Ultrasound machine for the Surgical Department in Dar es Salaam. This offered a unique opportunity at Muhimbili where, for the first time, a clinical department had its own Ultrasound service, not having to depend on the congested Radiology Department for ultrasonographic evaluation of its patients and patients from sister departments. An experienced surgical Ultrasonologist from Mannheim has conducted training courses in Dar es Salaam and Mannheim for further training in diagnostic and interventional Ultrasonography. The MUCHS department's plan is for ultrasonography skills to be taught to residents in the department as well as interested members of staff. The "Ultrasound Project", as it has come to be known, has made a tremendous impact on patient care at Muhimbili.

The staff exchange has also provided opportunity for sharing experiences in teaching of medical students between the two institutions. When visiting the sister department visitors attend teaching and student evaluation sessions conducted by the host teaching staff. In this manner, staff gain insight into the teaching and examination methods of the sister institution.

The staff exchange has involved on average two staff members per year from each side of the partnership, and 14 students from Mannheim and Dar es Salaam have made reciprocal visits.

Through the contacts made between staff and students from the two institutions initiatives were taken to carry out joint research. The accomplishments in research include an animal experimental study carried out in Dar es Salaam by researchers and students from the two institutions to compare the use of homemade suture from fishing nylon and commercial nylon suture in skin wound closure[9]. This was followed by a randomized trial in humans to compare the efficacy of the two types of suture[10].

As is inevitable, personal relationships and friendships have developed between the counterparts and other contacts through the program. These relationships are bound to continue to foster cooperation and exchange in personal as well as professional spheres between the two departments long after the official exchange program has ended.

Apart from the German Academic Exchange Service, which offers a special program for the promotion of university partnerships, a few other organizations provide programs for specialized surgical exchange, including The Tropical Health and Education Trust (THET), London, UK[7] and The Canadian Network for International Surgery (CNIS)[8]. In Germany such programs are likely to be supported by European and national grants.

Conclusion

The rapid and continuous developments taking place in general surgery require a concerted mobilization of human, financial, material and other resources, in order to stay abreast of these developments. For surgeons in countries of the South, particularly, it is difficult to achieve this without institutional partnerships.

North-South and South-South exchange programs for surgical training need support to strengthen medical systems in poor countries, a critical component of the Millennium Development Goals. A four-year exchange program between a German and Tanzanian surgical department has been presented as a demonstration of the feasibility and success of medical academic cooperation.

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