

Training Surgeons as Medical Educators in Africa

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INTRODUCTION

Based on the effect of essential surgical procedures, as evidenced in the Lancet Commission on Global Surgery and the World Health Assembly resolution on Strengthening Emergency and Essential Surgical Care and Anaesthesia as a Component of Universal Health Coverage, surgery is now recognized as an essential component of global public health. The third edition of Disease Control Priorities (DCP3) has a specific volume devoted to essential surgery and argues that a large proportion of the burden of disease can be ameliorated through surgery, that the provision of essential surgery is cost effective, can be expanded safely and effectively, and disparities in the delivery of safe surgical care need to be addressed.¹ High-quality surgery is affordable and feasible in low resource settings.² Though the global number and distribution of specialist surgical providers remains inaccurately measured,³ there is agreement that there is an insufficient surgical workforce worldwide,⁴ so the task being addressed in many lower and middle income countries (LMICs) is how to develop health professionals with the necessary surgical skills.

In many regions, local training programmes, supplemented by international organizations, are making significant inroads into addressing the surgical skills gap. The vast majority of internationally led surgical training initiatives in LMICs have focused on clinical skills teaching. Some focus on particular specialties (such as 2nd Chance [<http://2nd-chance.org/?lang=en>] and IVUMed [<http://www.ivumed.org>]), others on particular procedures or specific skills (such as Operation Smile

[<http://www.operationsmile.org>] and Smile Train [<http://www.smiletrain.org>]), or on the use of particular surgical or anesthetic equipment (such as Lifebox [<http://www.lifebox.org>]).

However, acquisition of teaching skills or pedagogical training has not generally been a distinct component of surgical education. Many of the internationally delivered training programs involve the training of a cadre of local surgical trainers to continue to deliver these courses after the international faculty depart—making such training more sustainable. However, such training tends to focus on the knowledge and competencies needed to teach that particular course. What is largely missing—at least absent in the literature—is the training of surgeons as educators and trainers—although Weber et al.⁵ cover some useful tips for plastic surgeons as educators. Such an absence is not unusual as in the body of medical education in general the focus has largely been on the development of clinical skills (such as simulation centers), methods of assessment, and the role of educational technology and less on the training of medical professionals as educators.⁶ It is relatively recent (since the 1980s) that the belief that an advanced degree in a speciality is all that is required for effective teaching in that area has changed,⁷ and nearly every report on medical education worldwide continues to support the continual need to develop health professionals as educators.⁸

Such educational training in LMICs is feasible. One such initiative, that won the Irish Institute of Training and Development award for Corporate Social Responsibility in February 2016 (<http://bit.ly/2dDs2PO>), is the training of surgeons in medical education and as trainers in East, Central, and Southern Africa. The partners in training were the College of Surgeons of East, Central, and Southern Africa (COSECSA) and the Royal College of Surgeons in Ireland (RCSI).

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TABLE. Course Content

On-line Modules	Face-to-Face Sessions
<ul style="list-style-type: none"> • Delivering a clinic presentation • Teaching at the bedside • Training a clinical skill • How to deliver feedback • Assessment methods • Goal setting 	<ul style="list-style-type: none"> • Review on online modules • Theory of adult learning and teaching • Assessment of: clinical presentation; teaching clinical skills, and constructing feedback
Development of a personal training plan for surgical trainees	

MEDICAL EDUCATION TRAINING FOR SURGEONS

COSECSA is an independent body that promotes post-graduate education in surgery and provides surgical training throughout the region of East, Central, and Southern Africa. COSECSA currently operates in its 10 member countries in the Sub-Saharan region: Burundi, Ethiopia, Kenya, Malawi, Mozambique, Rwanda, Tanzania, Uganda, Zambia and Zimbabwe, as well as in a number of accredited training centers in other Sub-Saharan African countries. The main objective of COSECSA is to advance education, training, standards, research, and practice in surgical care in this region. RCSI has been a main supporter of COSECSA, with the assistance of Irish Aid, since 2008. This collaboration has enabled the expertise, intellectual property and institutional knowledge of RCSI to be shared with COSECSA. Both colleges collaborate in a diverse range of areas such as financial management, information technology (IT), examinations, research, communications, advocacy, training, and strategic planning.

To ensure quality and consistency of training across its training hospitals (currently numbering 94), COSECSA worked with the RCSI Institute of Leadership to develop blended *Medical Education Train the Trainer* programmes for its surgical trainers. Through completion of these blended programmes COSECSA fellows could then become COSECSA accredited trainers. The process of developing the program commenced in July 2010, with a workshop with the COSECSA council and the RCSI Institute of Leadership to identify the core non-clinical competencies for consultant surgeons who also are the clinical trainers of new surgeons. Nonclinical competencies for the local context were brainstormed, grouped and lastly prioritized by the council members. To ensure these prioritized competencies were bench-marked against best-practice and internationally comparable RCSI Institute of Leadership assessed this list with competencies outlined by the Royal College of Surgeons of England (<http://bit.ly/2cAgyJR>), the NHS Clinical Leadership Competency Framework (<http://bit.ly/2ctD4GE>), the Royal Australasian College of Surgeons (<http://bit.ly/2ctzbs4>), and the American Accreditation Council for Graduate Medical Education (<http://bit.ly/2caCDOh>). With further discussions the council members

agreed on a co-designed list of non-clinical competencies for surgeons in the COSECSA region.

Once the list of competencies were developed it was decided to focus on the Medical Education competency with the goal of training as large a cohort of consultant surgeons as possible within the limitations of finance, time, geography, and availability. A target of training 200 consultant surgeons (14% of the entire consultant surgeon workforce of the region at that time $n = 1390$ [2010]—currently 1690) as medical educators over a 3-year period (2011–2013) was arrived. This is also in line with the “tipping-point” concept⁹ or the 80/20 principle—where a sizeable, though minority, group of individuals can effect sustainable changes.

The Medical Education Train the Trainers program covered theories of adult teaching and learning with application in practice; different approaches to training on the job and management of training needs; presentation skills and other methods in teaching particular clinical skills; preparation, delivery, and evaluation of on the job training programmes; and assessment and delivery of feedback. The Advanced Trauma Life Support (ATLS) Instructor Course Manual, published by the American College of Surgeons (<http://bit.ly/2dggdNK>) also informed program content. The ATLS was developed by the American College of Surgeons Committee on Trauma and was first introduced in the US and abroad in 1980. This course, that provides a concise approach to the care of a trauma patient, is also founded on principles of adult education (andragogy). The program was delivered through a blended learning solution (a combination of face-to-face and online teaching). A total of 6 modules were developed and subsequently hosted on COSECSA's surgical training platform—www.schoolforsurgeons.net—which has been developed by the RCSI/COSECSA collaboration. The use of online resources was premised on the recognized benefits of using online tools in education, such as overcoming geographic or physical access barriers, providing learners with greater control over timing and sequencing of learning, and obtaining higher retention.¹⁰ Details of the training content are given in the [Table](#).

However, it was also recognized that the challenge of poor IT infrastructure would need to be addressed. Thus, given the likely inadequate internet connectivity, low bandwidth and limited computer ownership,¹¹ a blended learning approach was adopted. Participants were required

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