Current challenges to urological training in sub-Saharan Africa

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Introduction
The global burden of urological disease is huge and there are inadequate resources in terms of healthcare providers and infrastructure to meet this need, particularly but not exclusively, in sub-Saharan Africa. In this article, we briefly outline the challenges with current training systems and the various models of overseas support.

Challenges
There are very few specialist urologists in sub-Saharan Africa and most urological care is provided by either general surgeons or clinical officers, who have received basic training over a 2- or 3-year course in order to deal with common clinical problems. Pathology frequently presents late and access to clinical investigations may be limited or non-existent. Gaining experience to decide when and how to perform surgery in this setting is complex, and operative decision making can be further compounded by cultural and patient factors such as the social acceptability of a urostomy or the ability of patients to access disposable resources, e.g. urethral catheters.

Formal Urological Training Structure
Currently, most countries in sub-Saharan Africa require trainees to complete a government ‘MMed’ programme in surgery before training as a specialist. Since 1999 the College of Surgeons of East, Central and Southern Africa (COSECSA) fellowship has existed, allowing trainees to complete member and fellowship examinations within urology. Specialist ‘MMed Urology’ programmes have also been developed, e.g. at the Kilimanjaro Christian Medical Centre (KCMC), Tanzania, where there are currently 17 residents in different stages of specialist urological training. The Pan African Urological Surgeons Association (PAUSA) also exists to promote initial and continual training and holds an annual scientific meeting.

Challenges for Trainees (Educational Setting)
Urological trainees in sub-Saharan Africa face unique challenges. The availability of basic urological equipment is fundamental to supplementing successful surgical training. Unfortunately, access to equipment remains problematic and trained urologists may not be able to fully utilise their operative abilities. Furthermore, operative outcomes and feedback are seldom attained as patients without complications rarely return from rural areas for follow-up. Operating independently without access to colleagues or mentors similarly makes the training environment sub-optimal.

Challenges for Trainers (Educational Approach)
Identifying who to train and what urological procedures to focus training efforts on is similarly difficult. Isolated surgeons in rural areas are unlikely to be able to limit themselves to just one surgical specialty. Maintaining service provision whilst attempting to teach others is particularly
problematic if you are the sole person providing a urological service, such as in Malawi, where there is only one (foreign-trained) practicing urologist for a population of >16 million people.

**Common Training and Professional Development Models**

Training opportunities for urological procedures tend to be focussed in urban teaching centres; so many surgeons have no access to active training. Consequently, some clinicians may only receive urological training via the input of overseas organisations. Currently, this support is often delivered in an ad hoc manner and across a variety of training platforms. Common methods of overseas support are outlined below.

**Workshops**

Workshops are a common method of overseas surgical support and if designed with a clear aim and locally relevant objectives, can be an excellent platform to augment surgical skills and meet specific learning needs. Workshops have the advantage of training large numbers of participants in one location within a limited time and also enable networking opportunities and informal exchange of ideas. In practice, training large numbers of participants is not always achievable in a short course and may not be sustainable. Workshops also require significant resource and financial investment.

**Surgical Camps**

Surgical short-term visits tend to be the most predominant approach for overseas surgical assistance [1]. Advantages include treating a large number of patients with a particular pathology in a short space of time. The primary focus is often to treat complex conditions, meaning that there may be limited training opportunities for local surgeons. Short-term surgical missions can sometimes cause more problems than they solve, such as leading to dependence on unsustainable systems by not training local surgeons [2]. Operating on a small number of patients in an ad hoc manner is unlikely to lead to long-term change. Ensuring governmental support may be more likely to lead to improvements in healthcare systems and infrastructure.

**Links**

Institutional links between two centres is a highly effective way to overcome some of the difficulties with providing assistance with training. Longitudinal relationships between clinicians can allow the development and evolution of services and follow-up of interventions. The benefits to both individuals and NHS institutions involved with international health improvement projects are increasingly recognised [3]. ‘Twinning’ partnerships are supported by Urolink and have allowed training opportunities for both parties and ongoing sustainable collaboration [4]. By assisting in addressing the global urological burden, there are undoubtedly significant benefits to UK-based urologists too.

**Exchange Visits**

Exchange programmes, such as the Commonwealth Medical Fellowships scheme, allow trainees to spend 3–6 months funded at a UK institution to enhance specific clinical skills. Previously concerns existed about trainees learning inappropriate procedures or dissatisfaction on return. The Société Internationale d’Urologie (SIU) offer scholarships at recognised institutions within their own geographical region in order to address this.

Difficulties with providing overseas assistance are often due to time and resource constraints. Brief visits or teaching complex interventions can be ineffective and issues such as who can deal with postoperative complications must always be considered.

Urolink has traditionally favoured ‘links’ or recurring longitudinal support to particular centres or surgeons. The most well-known example being the ‘Lester Eshelman/Urolink Workshop’, held biennially at the KCMC in Moshi, Tanzania. Since the establishment of the Institute of Urology, Urolink, along with other organisations, including the SIU and European Association of Urology, has been involved with the development of the department over 20 years, and KCMC is now a leading urological hub for sub-Saharan African, offering trainees exposure to high volumes of endoscopic work, complex reconstructive, and paediatric urology [5].

Other overseas organisations, such as IVUMed, also aim to help address the global urological disease burden and are involved with training and provision of high quality urological care. The European, American and British urological associations all have a different emphasis and preferences for working to help address global urological challenges and support training. Enhancing collaboration and co-ordinating efforts between these organisations and ensuring efforts are responsive to the local needs of recipient countries is vital to effectively utilise efforts to improve urological training.

The training landscape is challenging in terms of identifying who needs to be trained, what form of training is most effective, and how to deliver that training in a practical and sustainable way. Assessments of skills learnt have been shown to be effective [6] but some courses and workshops do not always seek feedback to assess their applicability or effectiveness. The lack of outcomes measurement is crucial and accentuates the need for longitudinal programmes and proper planning.
Summary
There is not a perfect model for overseas support, but it is clear that any intervention must be well planned, be responsive to local needs and ideally offer the opportunity for ongoing longitudinal support and training. Assessment and follow-up of outcomes, whilst difficult, is essential to further improving global urological care. It is the surgical community in low-income countries that will ultimately enforce change but overseas urological input from organisations can offer significant expertise to enhance training.

References

Over the horizon – future innovations in global urology
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Introduction
In the previous two commentary articles, we have discussed some of the issues surrounding global urology, with a focus on sub-Saharan Africa where the burden of urological disease is greatest. Coupled with low levels of infrastructure, funding and resources, the urological training environment is complex, with most urological care being provided by non-specialists. Accepting the challenges of working in this environment, we look ahead to potential developments and innovations to improve global urological care.

Educational Resources
A survey and qualitative interviews of clinicians providing urological care was undertaken over several months to understand how surgeons were accessing educational content (N.J. Campain, J.S. McGrath, R. MacDonagh & K. Mattick, unpublished data). Almost all accessed medical information using the internet on mobile phones. Sub-Saharan Africa is the second-largest mobile technology market and the fastest growing. In Zimbabwe, for example, growth has risen from 26% of households owning at least one mobile phone in 2008 to 80% of households in 2013 (9% annually) [1]. Trainees used videos of operations available on YouTube and free audio podcasts, but there was a strong desire for higher quality educational content.

Educational Content
Urology trainees routinely possess pdf versions of a wide variety of urology textbooks and share these resources freely amongst themselves. To access research articles, schemes such as the Health InterNetwork Access to Research Initiative (HINARI) set up between the WHO and major publishers exist, but trainees often have difficulty accessing content as an institutional library login is required. Internet connectivity on hospital computers is generally poor...