Global surgery and the role of trainees

Surgery was once described as 'the neglected stepchild of global health' (Farmer and Kim, 2008). It has been overlooked for too long with limited investment because of the perceived risks and challenges of delivery. Until recently, the demand for surgical care worldwide was also largely unexplored.

Global surgery

In 2010, it was estimated that diseases amenable to surgical intervention accounted for 30% of the global burden of disease (Shrime et al, 2015) with more associated mortalities (16.9 million) than the combined total of malaria (1.17 million), tuberculosis (1.20 million), human immunodeficiency virus infection and acquired immune deficiency syndrome (1.46 million).

In response to the substantial and growing global burden of disease amenable to surgical intervention, *The Lancet* Commission on Global Surgery was launched in 2014. This international initiative involving collaborators from more than 110 countries aims to assess the current status of global surgery, investigate its human and economic impact and derive long-term solutions. In 2015, the Commission's report (Meara et al, 2015) was launched with five key messages (*Table 1*).

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The report highlighted the need for significant scale-up of surgical services starting with the areas of greatest need. In south Asia, eastern, western and sub-Saharan Africa more than 90% of people do not have access to basic surgical care. As a result, death is common from easily treated surgical conditions such as fractures, appendicitis and obstructed labour (Meara et al, 2015). Despite accounting for more than one third of the world's population, only 6% of total operations worldwide take place in these low-income countries (Meara et al, 2015). For 50% of the world's population, accepting basic surgical care runs the risk of financial ruin thus acting as a deterrent for even those who may physically be able to access services.

It is clear that we must improve global access to affordable, timely and safe surgical and anaesthetic care. A major driving force for this will be the promise of economic gain.

The estimated global financial burden of surgical disease over the next 15 years is US$20.7 trillion with low- and middle-income countries carrying the bulk of this cost (Alkire et al, 2015). The majority of patients undergoing surgical intervention are otherwise well and can return to become economically productive members of society, providing for a high number of dependents. Surgical and anaesthetic care is therefore a good investment. Studies have shown the cost effectiveness of surgery compared with other medical interventions, for example, the cost of a cleft lip repair is estimated at US$ 60 per disability-adjusted life year, with hernia repairs estimated at US$ 50 per disability-adjusted life year saved, much less than many other basic drug interventions (Grimes et al, 2014). With the growing incidence of non-communicable diseases such as road injuries, farming accidents, cancer and cardiovascular disease requiring surgical intervention in low- and middle-income countries, the time to act is now. Surgery must be recognized as a public health priority and integrated into policy, planning and into strong health-care networks.

The role of trainees

In response to the Commission Report in 2015, a group of trainees based in the UK formed the Global Anaesthetic, Surgical and Obstetric Collaboration (GASOC, www.gasoc2015.com). This organization aims to provide a platform for trainees to improve their engagement with global surgery (*Table 2*).

The exact role of trainees in global surgery is yet to be defined. Currently, there are various ways to become involved with roles from fundraising to working overseas. Trainees can take time out of training to participate in the latter and offer their services in resource-poor settings. The benefits of trainee involvement in global surgery run both ways. Trainees aim to benefit the host region through education of the workforce and helping address clinical need, but trainees also have much to gain.

Table 1. Five key messages for health policy makers from *The Lancet* Commission on Global Surgery report
5 billion people do not have access to safe, affordable surgical and anaesthesia care when needed
143 million additional surgical procedures are needed in low- and middle-income countries each year to save lives and prevent disability
33 million individuals face catastrophic health expenditure as a result of having to pay for surgery and anaesthesia care each year
Investing in surgical services in low- and middle-income countries is affordable, saves lives and promotes economic growth
Surgery is an indivisible, indispensable part of health care
From Meara et al (2015)

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Table 2. Objectives of the Global Anaesthetic, Surgical and Obstetric Collaboration
To improve awareness of issues related to global surgery among trainees. Build a cohesive advocacy movement for global surgery among trainees from across the surgical specialties
To improve support for research and training opportunities in low and middle income areas. Ensure that these are recognized as part of postgraduate medical training in the UK. Advocate for structured training in global surgery and the specific academic and clinical issues it raises
To be a 'go-to hub' for postgraduate trainees across the three specialties to share relevant opportunities, educational resources, research and publications within the global health scene
from www.gasoc2015.com

First there is the breadth of pathology and the high and complex operative case-volume. Doctors must rely heavily on history and examination for diagnosis as radiology, pathology and microbiology services are often not readily available. This improves diagnostic skill and clinical aptitude. Trainees must be adaptable and able to think laterally to maintain high standards of patient safety.

Second, there is great scope for developing skills in clinical leadership. Trainees who integrate with the local communities can identify room for improvement and work in conjunction with host teams to improve clinical care through audit and research. Done in collaboration with local and regional authorities, this sustainable means of quality improvement can continue to benefit the region long after the departure of the visiting team.

Finally and perhaps most importantly, is the opportunity to engage in teaching and training activities. The physician to population ratio in low- and middle-income countries is 0.7 per 100 000 (Holmer et al, 2015) with a particular dearth of qualified surgeons, obstetricians and anaesthetists. As a result, over 80% of the procedural cases are undertaken by either general practitioners or non-physician clinical assistants (Meara et al, 2015). Senior trainees who are mindful of the resources available can positively contribute to the teaching and education of non-specialist providers through contextualized sessions incorporating both theoretical and practical knowledge.

Pitfalls to avoid in overseas work

Despite the opportunity for harmonious and effective exchanges there are a number of challenges to avoid. One is the notion that visiting teams come to practice their skills on a poorer, more vulnerable population and adopt lower standards of care than they would in their routine practice (Cintolo-Gonzalez et al, 2016). To counter this, project leaders must ensure that trainees are adequately supervised; competence and quality of care must not be sacrificed for the sake of experience.

There are also concerns that the training of overseas doctors in low- and middle-income countries may detract from the training of local staff. Trainees involved in global surgery must be willing to sacrifice operative time to ensure the best possible experience for local trainees. Often this means that the main focus must be on non-operative goals, working towards enhancing education and further understanding the local health system.

The greatest scepticism lies in the longevity and long-term benefit of these isolated projects. The development of a true sustainable system of surgical care provision depends entirely on the effective collaboration of local, regional and international authorities. It requires a coordinated needs assessment, with foreign missions completing set goals driven and agreed by their host organization. A robust system of accountability and feedback on mission attainment must be built into any programme.

The future of global surgery training

What is the outlook for the future of global surgery training? The United States is leading the way with recognized training and fellowships in global surgery such as the programmes at Harvard University and University of California, San Francisco. In the UK, opportunities in global surgery are currently dispersed and individualized. Umbrella organizations to unite these opportunities in one place, such as GASOC, will make it easier to present a cohesive face for global surgery training. Advocacy movements are currently pushing for global surgery training to be recognized as an academic subspeciality in the UK. Work is being undertaken to have work-based assessments and a curriculum to officially recognize the benefits and learning opportunities of work abroad.

GASOC is hosting its inaugural global surgery conference at the Royal College of Surgeons of England on 14 April 2016, 1 day before the Global Surgical Frontiers Conference. We hope you will join us!

One thing is clear. We must all unite and step up in our efforts to cement the foundations of global surgery, allowing it to become the sister rather than the step-child of global health. **BJHM**

KEY POINTS

- There is a growing movement internationally to recognize surgery as a cost-effective public health measure.
- There is a great need to scale up surgical services internationally to improve access to surgery to the 5 billion people worldwide who lack it.
- Surgery is a cost-effective intervention.
- There is much to be gained by trainees through involvement in global surgery.
- All overseas global surgery work must first and foremost be developed to suit the needs and goals of the host team.

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