

EDITORIAL

Growing local research in the era of Global Surgery

Abstract

Equity of access to quality musculoskeletal health care is a massive challenge for orthopaedic surgeons in South Africa. Over generations we have developed an inherent capability of frugal innovations and creative ways to improve our patient care. To establish a lean research culture and seek productive collaborations in the current research environment is key to generate indigenous evidence, independent of resources and funding. This bottom-up approach can co-exist and find synergies with an external strategy which evolved from the concept of 'Global Surgery'.

Global Surgery

The concept of Global Surgery describes 'an area of surgery, research, practice and advocacy that seeks to improve health outcomes and achieve health equity for all people who require surgical care, with special emphasis on underserved populations.'¹ It includes all disciplines of surgery and related areas (i.e. anaesthesia) and acknowledges the influence of social, economic, cultural and environmental factors. Therefore, solutions do not only involve surgery itself but can be leveraged by engineering, information technology and manufacturing.² Inequity in surgical care is not only a problem for low- to middle-income countries. In developed countries underserved populations represent poor, uninsured or individuals of ethnic minorities,^{3,4} as well as groups affected by conflict or natural disaster.⁵ The consequence of adequate Global Surgery would be an improved access and quality of surgical care which is not restricted by geography or development status.¹ This concept has started to gain recognition in 2014 after the urging of Jim Kim, then President of the World Bank,⁶ and statements by the Lancet Commission for Global Surgery.⁷

The idea of Global Surgery is the core of what South African orthopaedic surgeons have practised since the formation of our discipline in this country. The concept is therefore not new to us, but the awareness of it is novel. Also, the current understanding of Global Surgery might be influenced by the viewpoint of leaders and institutions in the developed world as many of us here would just call it 'Surgery'.

Nevertheless, we can embrace the idea that the world is shining a light on our work, and invite them to be part of it as they recognise that they can play a positive role in what happens here. While their resources and skills are valuable, the authenticity of our experience and understanding is key in the process.

The question is therefore not if global surgery units in Harvard, Kings College, or the Lancet can provide answers for us but if we can create productive groups within South Africa who can fill this void.

Orthopaedic research environment in South Africa

New core requirements in the form of a research-based dissertation (MMed) to register as a South African orthopaedic specialist are proof of the drive by the HPCSA and academic centres to generate local research. Yet, a mismatch of expectations in the form of publications and research degrees compared with the limited resources available have created challenges and tension which adds to a growing clinical load. Furthermore, recommendations for good clinical practice and ethical standards have increased immensely and although this is necessary, we are left intimidated by the complexity of required processes to perform research. Is this all still worth it for us?

These challenges influence the generation of local evidence and we look towards Europe and the US for answers to our local problems. Yet, this evidence is based on different patient populations, health care burden, and available resources. In the meantime, the challenges of our

local orthopaedic practice and their solutions are at our fingertips, once we see beyond the doctrines of 'first world surgery' (without ignoring them). The next section describes some key factors which can help to take advantage of this and grow 'Global Surgery' locally, in South Africa.

Growing an orthopaedic research group in South Africa

Many legacies of great orthopaedic teachers in South Africa resulted from finding ways to overcome challenges endemic to our country, in creative and resourceful ways. As we are shaped by this philosophy, orthopaedic surgeons in South Africa excel in their agility to find ways to solve their challenges. Therefore, these limitations are reframed as opportunities to generate local evidence and create frugal innovations.

Initially it is crucial to understand our research effort as 'circular', fostering itself, not as a line (i.e. proposal, data collection, analyse and publish). The key factor to close this loop is to embed our research into our local community and generate social impact. This will provide relevant solutions for important questions and increase the immediate purpose of the research done. This process needs to be driven by a group of individuals with strong values, skills and insight. For this group, collaboration is fundamental to leapfrog and tackle shortcomings.⁸ Provided cohesion can be maintained, the diversity of the group is one of the strongest drivers to innovative solutions. Ideally this collaboration should therefore include different departments, disciplines and countries. In these collaborations, non-clinical researchers can provide valuable research skills and experience, thus alleviating the burden on surgeons.

To identify challenges in our practice, audits and quality improvement projects are very useful to provide the forum to highlighted areas where imminent answers are needed and where effort should be channelled to.^{9,10} Allowing trainees to be part of this process, not only in data collection, but also in defining challenges, finding solutions and influencing vision, is fundamental to the longevity of our research impact.^{11,12} It creates ownership and motivation within the team, with personal goals transcending into research projects. Thus, an organically grown vision and strategy, influenced by every member, ensures individual identification with these goals.¹³

The resulting direction is another key factor essential to take the group further. This is not a top-down strategy from international or national commissions but a focus which the local group sees for its community. The quadruple burden of disease (HIV/AIDS/TB, maternal and child mortality, high levels of violence and injuries, growing non-communicable disease)^{14,15} is unique to South Africa and will certainly be one of the strongest

influencers of our purpose. Furthermore, certain key skills of the individual members or access to collaborators and their resources might influence the direction of the group.⁸

To increase the productivity and performance, effective research processes will be another important factor. This should be centred around increasing the quality of the research and decreasing the risk of wastefulness of time and resources. The most efficient way to do this is to support and monitor adequate protocol writing, statistical support and constructive mentoring. The research protocol is the blueprint of how the group can achieve its goals, not solely a document with the function to pass councils and committees.

As part of a quality check, an internal review process is helpful, ensuring projects are aligned with the overall strategy of the group. For trainees or students, the initial contact with research is often intimidating and frustrating. To keep direction during this time, it is vital to formulate attainable goals and simple project designs, achieving 'small wins' early on.

Funding is not essential up to this point but will leverage the growth and impact of the group. Keeping the group structure and processes lean will make the research group independent of funding but eventually financial resources will limit its growth. Small seed funding is available through various associations, including the South African Orthopaedic Society. Initially, it is very helpful to partner with institutions or departments that have resources and experience to attract major funding, as this is mainly distributed based on the 'success of the successful'.¹⁶ Contract research is another way to generate funding but should be planned carefully as it can turn the group into contractors rather than visionaries.^{17,18} Similarly, donations (i.e. device companies) can provide start-up capital but financial independence is better achieved when the group stimulates funding from output and intellectual capital.

In conclusion, the local way of Global Surgery is to create indigenous solutions to our challenges by establishing high quality collaborations with organically grown values and a vision. To direct our effort at improving our local community will give purpose, independent of the group's size or resources. The trigger will be to see limitations as opportunities. Current trends and the concept of Global Surgery promise support of our inherent orthopaedic practice from international funders and large centres, with synergies in addressing equity, access and quality of surgical care.

At UCT we have established the Orthopaedic Research Unit to this end. Among our research initiatives we offer a MSc in Global Surgery to action the above discussion. An open invitation to join our group or collaborate with us is extended to anyone who shares these views (www.oru.uct.ac.za, contact: michael.held@uct.ac.za).

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Guest Editor - Michael Held

MD(LMU), PhD(UCT), MMed(UCT)Ortho, FCOOrth(SA)
 Consultant Knee Surgeon, Groote Schuur Hospital
 Director Orthopaedic Research Unit,
 University of Cape Town



Guest Editor - Robert Dunn

MBChB(UCT), MMed(UCT)Ortho, FCOOrth(SA)
 Consultant Spine and Orthopaedic Surgeon
 Professor and Head of the Department of Orthopaedics,
 University of Cape Town
 Head: Orthopaedic Spinal Services, Groote Schuur Hospital
 Spine Deformity Service, Red Cross Children's Hospital