

Global surgery: defining an emerging global health field

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Global health is one of the defining issues of the 21st century, attracting unprecedented levels of interest and propelling health and disease from a biomedical process to a social, economic, political, and environmental concern. Surgery, however, has not been considered an integral component of global health and has remained largely absent from the discipline's discourse.¹ After much inattention, surgery is now gaining recognition as a legitimate component of global health. In January, 2014, Jim Kim, President of the World Bank, urged the global health community to challenge the injustice of global inequity in surgical care, stating that "surgery is an indivisible, indispensable part of health care and of progress towards universal health coverage".² However, defining a place for surgery within the current global health paradigm of disease-based care and issue-specific advocacy remains a challenge—surgery is not a distinct disease entity such as HIV/AIDS, nor does it target a specific demographic such as reproductive, maternal, neonatal, and child health. Rather, surgery plays a part in addressing a diverse set of cross-cutting health challenges within a health system³ and is crucial to the full attainment of global health goals.

Individuals and groups committed to addressing global inequity in access to surgery and improving the status of surgical care within global health have started to come together under the umbrella of global surgery. Although the term global surgery has rapidly entered the vernacular, a definition has not been provided. Here, we discuss the importance of defining global surgery to advance its role as an indivisible component of global health and propose a working definition that can serve as a focal point around which both the surgical and wider global health community can unite. Increased awareness of the place for surgery within global health will benefit not only the surgical community, but all those working to improve health outcomes, strengthen health systems, and reduce health inequities at a local and global scale.

Common definitions in global health are central to the setting of objectives, priorities, and strategies, communication of goals and vision, and channelling of resources.⁴ They can also act as a rallying point, to unify different actors and create strong community cohesion, which is key to generation of political priority.⁵ The nascent global surgery movement would do well to learn from global health's mistakes. Failure to define global health early in its own development allowed and even encouraged several, competing, and sometimes contradictory frames of reference to emerge.⁶ The confusion was damaging and created silos and factions among groups instead of cohesion and cooperation.⁶

Although global surgery has not been defined formally, definitions for various related terms including surgical

care, surgical conditions, and surgical providers have been proposed (appendix). These definitions take a broad, inclusive approach to the definition of surgery, recognising that surgical care is usually delivered within multidisciplinary teams. Such care does not always involve an operation or procedure and can be delivered at primary care level and in the hospital setting.

Underpinning the emergence of the term global surgery has been a desire to link surgical need with the overall global health agenda. To define global surgery conceptually, the central tenets of global health therefore need to be incorporated. These tenets have themselves been the subject of much analysis and debate,^{4,7,8} but are broadly considered to include the global conceptualisation of health, the synthesis of population-based approaches with individual level clinical care, the central concept of equity in health, and the cross-sectoral, interdisciplinary approach to the understanding of ill health and its solutions.^{4,8}

The term global in global health refers to health issues that are worldwide or universally present, that transcend national boundaries, and are supraterritorial—such as, for example, climate change.⁷ The key commonality is that global is used to refer to the scope of the problems not their physical location.⁴ So too for global surgery. In the absence of a clear definition, global surgery has been increasingly used to refer to surgery within geographical boundaries, and particularly within low-income and middle-income countries. A focus on these countries is appropriate because inequity is greatest in these regions. However, definition of the specialty as referring only to the problems of specific countries or regions would be incorrect. Concentration on the scope of the problems and the processes driving them rather than the geographical boundaries in which they are contained allows for greater insight into determinants and solutions.

A global approach to surgery will mean a change in the way responsibility and accountability for surgical care are approached. Because the causes of inadequate or inequitable surgical care and the solutions are often interconnected or interdependent, the burden and responsibility for improving care is collective and needs to extend beyond sovereign borders. Identification of successful strategies for increasing collective responsibility, action, and accountability at a global level, which are also locally grounded, will be crucial to meaningful progress in global surgery. The emergence of several transnational initiatives that address globally relevant issues in surgery such as patient safety,⁹ hospital-acquired infection,¹⁰ and international organ trafficking¹¹ are examples of strategies that have been conceived at a global level, developed on the basis of collective responsibility, and adopted within countries and local institutions.

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See Online for appendix

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Clinical care for individual patients in surgery needs to also be complemented by population-level preventive approaches. For example, vaccination to prevent cervical cancer and road safety policies to prevent road-traffic injuries are also required to reduce the burden of surgical conditions. Likewise, a key component of global surgery will be acquisition of an understanding of the social, economic, cultural, and environmental determinants that affect the burden of surgical disease, health-seeking behaviours, and delivery of effective surgical care. Global surgery involves a holistic approach to the understanding of problems and the development of solutions that extends beyond the narrow biomedical model of disease. Surgical providers have a legitimate role in advocating for provision of a full spectrum of care and working with other disciplines and sectors to achieve this goal.

Health inequity and its determinants and repercussions have been strongly linked to the emergence of global health.⁸ The poorest third of the world's population, who reside in countries where per person health expenditure is US\$100 per year or less, have a disproportionate burden of disability-adjusted life-years from surgical conditions,¹² but they undergo only 3·5% of the world's surgical procedures.¹³ About 2 billion people worldwide have no access to any surgical care.¹⁴ High-income countries have ten-times as many operating theatres per person,¹⁴ and up to 100 times as many surgeons as do low-income countries.¹⁵ Nevertheless, common surgical procedures delivered in low-resource settings can be very cost effective, comparable to other widely accepted global health interventions such as antiretroviral therapy.¹⁶ Surgery can no longer be viewed as too costly and complex to be included within essential health care in low-income and middle-income countries. Both a moral imperative¹ and an economic case¹⁶ exist for addressing surgical inequity in the world's poorest regions.

Global surgical inequity is not only present in low-income and middle-income countries. In many countries with advanced economies, individuals who are indigenous, poor, uninsured, from an ethnic minority, or live in a remote area, are also substantially less likely to receive adequate, timely surgical care.¹⁷⁻¹⁹ Conflict, displacement, and natural disaster can also result in the sudden absence of surgical care irrespective of a country's development status.²⁰ A focus on surgical inequity therefore ought not be restricted by geography or development status.

Perhaps more than in any other area of health, delivery of surgical care depends on interdisciplinary networks and processes both within and outside health systems. This dependence is because surgical disorders span all disease categories and levels of care and because surgical care is both supported by and required for a diverse range of health services. Surgery requires sound physical infrastructure, and a reliable, safe supply chain for consumables. The presence of such infrastructure strengthens the overall ability of a hospital or health

service to provide a wide range of surgical and non-surgical services. In this sense, the ability to provide surgical care is an excellent test of the strength of the health system, because it cannot easily be delivered at scale in isolation.

Delivery of safe and continuous surgical care is reliant on access to markets, transport, power, water, and waste management, and political and economic stability and good governance.²¹ A cross-sectoral approach is therefore pivotal to allow improvement of surgical care and reduce inequity. For example, many of the technical solutions to provision of equitable and efficient surgical care worldwide, and particularly in challenging environments, probably comes from the engineering, information and communication technology, and manufacturing industries. Global surgery should embrace these broad cross-cutting approaches as central to its definition, implementation, and delivery.

On this basis, we seek to define global surgery as an area for study, research, practice, and advocacy that places priority on improving health outcomes and achieving health equity for all people worldwide who are affected by surgical conditions or have a need for surgical care. Global surgery incorporates all surgical specialties, including obstetric and gynaecological surgery, anaesthesia, perioperative care, aspects of emergency medicine, rehabilitation, and palliative care and nursing and the allied health professions involved in the care of the surgical patient. It encompasses surgical care for underserved populations in all countries and for populations affected by conflict, displacement, and disaster, and promotes access to safe, quality care. Global surgery emphasises supraterritorial and transnational issues, determinants, and solutions, recognising that the determinants of inadequate or inequitable surgical care are often the result of common and interdependent global structures and processes, even though they are predominantly experienced within individual countries and communities. Global surgery involves many disciplines within and beyond the health sciences and promotes interdisciplinary collaboration, transnational partnerships, and multidirectional knowledge exchange. It is a synthesis of population-based approaches and individual-level clinical care.

This definition, although articulating the broad scope and boundaries of global surgery, is lengthy and a shortened version might be needed in some instances. We therefore propose a more concise, working definition rooted in that constructed by Koplan and colleagues⁴ for global health: global surgery is an area of study, research, practice, and advocacy that seeks to improve health outcomes and achieve health equity for all people who require surgical care, with a special emphasis on underserved populations and populations in crisis. It uses collaborative, cross-sectoral, and transnational approaches and is a synthesis of population-based strategies with individual surgical care.

We share Jim Kim's belief that surgery ought to be "an indivisible, indispensable part of health care" and that all people should have access to safe, high quality, affordable, and equitable surgical care when needed. Achievement of these aspirations will be possible only by first defining the entity—global surgery—and articulating its clear role within global health.

Contributors

AJD and AJML conceived the work. AJD carried out the background research, wrote the report and is the corresponding author. CEG, RG, SLMG, LH, JGM, and AJML designed the report and revised the drafts.

Declaration of interests

We declare that we have no competing interests.

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