

## A journey through time in global surgery

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### Abstract

According to the 2015 Lancet Commission report, 5 billion people do not have access to necessary surgical care around the world. Global surgery was born to solve this problem, being a field of study, research, practice, and advocacy that aims to improve health outcomes and achieve health equity for all people who need surgical, anaesthesia, and obstetric care. This idea emerged more than 40 years ago and resulted in very interesting initiatives in favour of better surgical care, evolving together with global health. Currently, global surgery has received the engagement of medical students worldwide, being a fundamental topic in the formation of these future health professionals. Therefore, the purpose of this article is to reflect on the past, present and future of global surgery, drawing a parallel with the story of the protagonist of the book series *Outlander*, by Diana Gabaldon.

### Abbreviations

DALY - Disability-adjusted life year

HIC - High-income countries

LMIC - Lower-middle-income country

WHO - World Health Organization

### Background

In *Outlander* by Diana Gabaldon, the protagonist Claire, a World War II combat nurse and then a surgeon who travelled through time, faces the challenge of applying her twentieth-century surgical knowledge, including anaesthesia, antibiotics, and antisepsis, to the less-resourced scenario in eighteenth-century.<sup>1</sup> Thinking otherwise, if Claire were supposed to travel to the twenty-first century, how would she practice medicine with all the current surgical knowledge?

In the sixth book of the series, the character identifies a serious condition called persistence of the ductus arteriosus in her newborn granddaughter, which required surgical treatment. However, unfortunately, she was unable to solve this problem in the eighteenth

century. Today, just like Claire's granddaughter, a newborn with a congenital malformation, or other patients who need appropriate surgical care, such as a mother in labour, a man with appendicitis, a woman with breast cancer, or an elderly person with a bone fracture, may not be dealt with adequately in many countries, leading to disability or death. Back to Claire, if she were to travel to the twenty-first century, she would be disappointed to see that despite the current evolution in surgical care, many people do not have access to necessary surgery, which is what she faced in the 1700s but in a different context. However, global surgery has been born to solve this problem.

### The past

Conceptually global surgery is a field of study, research, practice, and advocacy that aims to improve health outcomes and achieve health equity for all people who need surgical, anaesthetic, and obstetric care, focusing on underserved populations and populations in crisis.<sup>2</sup> This idea started in 1980 with a remarkable speech from the Director-General of World Health Organization (WHO), Dr Halfdan Mahler, in the World Congress of the International College of Surgeons. He pointed out the relevance of surgery as a public health issue, emphasised the lack of access to surgical care for the majority of the world's population and asked for solutions.<sup>3,4</sup> More recently, a breakpoint was the establishment of the Lancet Commission on Global Surgery in 2014, an initiative that has significantly leveraged global surgery, especially with its report stating evidence and solutions for improving surgical care by 2030.<sup>2</sup>

*Thus, although global surgery and global health have always walked together, nowadays they are inseparable.*

### The present

When discussing global health, it is essential to recall the WHO Constitution's moral principle: "the enjoyment of the highest

attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition".<sup>5</sup> Unfortunately, surgical care does not meet this principle. According to the 2015 Lancet Commission report, 5 billion people do not have access to necessary surgical care.<sup>2</sup> In low-income and lower-middle-income countries (LMICs), nine in ten people cannot access basic surgical care.<sup>2</sup> As a consequence, surgery is responsible for about 30% of the global burden of disease.<sup>2,6</sup> The outcomes are sad: with the lack of an accessible and safe surgical system, people may die from avoidable conditions or cope with the consequences for a prolonged period of time. With this perspective, it is estimated that

*scaling up basic surgical care in the health system in LMICs could prevent 1.4 million deaths and 77.2 million disability-adjusted life years (DALYs) per year.<sup>7</sup>*

Therefore, global surgery is a matter of guaranteeing a healthy life for our world's population, as the WHO Constitution intended.

Moreover, when considering global surgery in 2021, it is essential to mention the COVID-19 pandemic's impact on surgical systems. According to the predictive model made by the CovidSurg Collaborative, in a disruption period of 12 weeks because of COVID-19, more than 28 million operations would be cancelled or postponed, with 37.7% of those procedures being operations for cancer.<sup>8</sup> In many countries, the pandemic forced the surgery system to slow down in pace, which may have worsened previous problems, especially in LMICs. Nonetheless, there are solutions for this issue: improving surgical systems can help to build capacity for the treatment of patients during a health emergency, like the COVID-19 crisis.<sup>9</sup> Thus, investing in surgery can help to ensure preparedness for pandemics, as clearly addressed by Dr Key Park in the ARU Surgical Society Global Surgery Symposium. Hence, it is crucial to include this topic on the global surgery agenda from now onwards.

## The future

Thinking towards the future, global surgery may be a fruitful tree, the seed of which we plant today. A pivotal step is to invest in people who are the future of the operation room. For that, universities around the globe, especially outside of high-income countries (HIC), must include global surgery in their medical curriculum. Students must discuss this topic in classrooms and, in turn, aim to improve their local surgical system. Likewise, surgical societies must promote mentorship programmes to facilitate a relationship between surgeons and trainees interested in global surgery. Furthermore, it is important to set up a culture of searching, discussing and producing scientific literature at all academic stages to investigate, assess and find solutions to global surgery. An example is the InciSioN initiative, a non-profit organisation comprised of students, trainees, and early career physicians around the world, dedicated to advocacy, education, and research on global surgery.

To summarise, "partnership" would be the keyword for Claire's travel to the future of global surgery. Since global surgery began, HICs lead most initiatives in this field. However, global problems demand global solutions. It is fundamental to establish a collaboration between the most diverse agents in global surgery. We must give voice to those who most need surgical care. For this, social media can be a catalyst tool for a worldwide network in global surgery. Sharing a personal example, even as an undergraduate student, I feel connected with a community of people interested in global surgery—people that try their best to improve the surgical systems around the world. In that network, I know Claire would be very willing to contribute.

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