



International research collaboratives in global surgery

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Abstract: Lack of access to safe, affordable and quality surgery is a significant problem around the world. Global surgery is a multidisciplinary field aimed to improve surgical care across international healthcare systems. Global surgery research requires international collaboration between high income countries and low and middle income countries (LMICs). International research collaborations (IRC) should aim to increase access to surgical care, encourage local capacity building, quality improvement and mutually enhance care of patients. Collaboration provides opportunities to get exposure to different perspectives in order to achieve mutually beneficial objectives, train professionals around the world, standardize care and improve systems, with the goal of achieving adequate quality care for everyone. However, these collaborations are many times suspect due to the potential inequality that they arise from. Collaborators from LMICs many times participate in an ancillary role such as data-gathering or translation of protocols, not having an active participation on the intellectual part of the process. In recent years, this has been gradually replaced by a horizontal model of collaboration in which everyone's voice is heard. Some of the most common barriers in IRC are language, political, ethical, cultural, and economic issues. One of the biggest challenges is getting everyone on board and finding local leaders with the right abilities and motivations. The Centre for Global Surgery Research at Hospital Español de Veracruz has collaborated mainly with 2 groups: Rutgers Global Surgery, focused on achieving timely, quality, and affordable surgical care for everyone; and the United Kingdom National Institute for Health Research Global Health Research Unit on Global Surgery (NIHR GSU), with the goal of building sustainable research and training capacity around 4 main themes: cancer, surgical site infection, perioperative care, and access to surgery. Global surgery is about equity, justice, and collaboration. Research is needed in order to improve IRC on surgery.

Keywords: Research collaboration; partnerships; global surgery; international collaboration

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Surgery was until recently not considered as a global health priority. Since the publication of the Lancet Commission on Global Surgery (LCoGS) report (1) there have been significant advances in our understanding and awareness of the lack of access to safe, timely, affordable surgery in a significant proportion of the world's population and global surgery research has rapidly evolved into a very dynamic field of global health. The very nature of global surgery requires international research collaboration (IRC) between

high income countries (HIC) and low and middle income countries (LMICs). The aim and consequence of this collaborations should be to increase access to surgical care, encourage local capacity building, quality improvement and mutually enhance care of patients (2).

Risks and benefits

We live in a globalized world where it's becoming

practically impossible not to socialize and learn from people around the world. “Ideas transcend borders, no country controls the marketplace of ideas.” (3). Creating international partnerships and networks is a great way of exchanging knowledge, ideas and experience as well as problem-solve shared difficulties within diverse health systems. Collaboration provides opportunities to get to know different perspectives in order to achieve the same goals. It’s not feasible to think there’s just one way of handling an issue or that one person has all the right answers for every single problem. Nowadays, technology and digital media make these collaborations much easier. Email, telecommunication platforms, online virtual meeting rooms, and social networks, make global communication a daily possibility.

In surgery, IRC can generate enormous changes and benefits to both patients and health care professionals. Whether it’s used to train professionals around the world or standardize care and quality systems, the main goal is to achieve adequate and quality care for everyone. When partnerships are created, everyone has a different role (resources, data analysis, health economics, infrastructure, etc.), but at the end, the benefits obtained should be shared by all.

Another important benefit of IRC is being able to generate high impact publications. Bigger studies with bigger samples generally have the ability of generating robust outcomes and greater impact. Additionally, if these samples involve subjects from around the world, results have increased validity and could be easily applied worldwide. Between 2000 and 2013, scientific publications with authors from different nations increased from 13.2% to 19.2% (4).

However, these collaborations are not without risks and controversies. Historically, authors from LMICs have been under-represented in published research conducted in their countries by authors from HIC (5). In many instances, collaborators from LMICs are only asked to participate on a research project in an ancillary role like data-gathering or translation of protocol documents without taking any active participation on the intellectual part of the process such as planning of the protocol, analysis or writing of research outputs (6). Another factor that may drive this phenomenon is the lack LMICs representation in editorial boards of leading surgical journals (7). These inequalities are partially fueled by an ill-starred reward system of global research, in which scholars mainly from HIC publish in order to increase their academic standing by garnering citations and

ultimately research funding, without valuing the practical application of such research and disregarding capacity building at collaborating partner institutions. Traditionally, this approach to research in LMICs had been negatively perceived as neocolonialism, but in recent years it has been gradually replaced by a horizontal model of collaboration in which everyone’s voice is heard, participation is not only encouraged but required and building capacity at the local level is an imperative.

Challenges and barriers

To ensure a successful, reliable and high quality IRC, it’s important to take into account several barriers or challenges that might complicate global partnerships. Some of these might be minor inconveniences with easy solutions or adjustment needs; nevertheless, there might be some that require a more thoughtful solution or plan.

Among these barriers are language, political, ethical, cultural, and economic issues. Working with different countries might mean working with different languages, it’s important to make sure translations are made accurately so that words have the same meaning for everyone involved in the collaboration.

One of the biggest challenges of research collaboration, is getting everyone on board. As stated by Freshwater *et al.* (8), collaborative international research requires a lead researcher who has the skills to acknowledge and transcend cultural differences and create a virtual environment within which the research team can form a motivated and coherent whole, albeit with diverse skills and knowledge. So, one of the first steps in creating strong collaborations is finding leaders around the world with the right abilities and motivations to commit to the project and are able to create teams of researchers who work together to achieve goals.

Differences in local regulations and policies must be considered. Ethics and research committee’s requirements vary greatly among different countries. It’s important to discuss the complete protocol and make sure everyone agrees on what needs to be done and what is the right way of accomplishing it. Besides, getting people to participate in research studies is not a one-size fits all policy, what works in Ghana might not work in Brazil or in India. Taking into account local customs and traditions is imperative during subject recruitment.

Another great challenge are the financial costs. Research, almost in every case, needs funding in order to be carried

out efficiently. Moreover, international research generally incurs in additional costs such as travel, personnel, professional translations, and communication software and tools. A financial strategy should be made to make sure the project has the economic support needed to be carried out as planned. It is important to consider different sources of funding in order to ensure sustainability and continuity to different projects and avoid financial dependence on a single funder.

Another aspect of IRC that needs to be accounted for is the increased carbon footprint that these projects may carry with them due to an increase need for international air travel (9).

Our experience

The Centre for Global Surgery Research at Hospital Español de Veracruz (CGSR HEV) has collaborated mainly with two groups: Rutgers Global Surgery and the United Kingdom National Institute for Health Research (NIHR) Global Health Research Unit on Global Surgery (GSU).

Rutgers Global Surgery – Rutgers University

For the last two years our group has been an active member of the Latin American Indicator Research Collaboratory (LAIRC), which is an initiative lead by Rutgers Global Surgery in partnership with Latin American/Caribbean and North American institutions with the goal to achieve timely, quality, and affordable surgical care for everyone. We've been working on our countries/state situation analysis, based on the LCoGS six core indicators to be able to identify inequities in emergency and essential surgical system access. In Mexico, 48% of the population doesn't have access to adequate health care systems. This mainly because of two reasons: financial barriers and geographical limitations (10). One of our aims is that by using geospatial analysis we can map out the geographic components of the indicators with an emphasis on the 2-hour access to surgical facilities. Once this data is complete, we'll be able to develop and implement a plan to improve surgical care in the state of Veracruz.

NIHR GSU

The NIHR GSU was formed in 2017 as a consortium between the Universities of Birmingham, Edinburgh and

Warwick, together with the GlobalSurg international partners and has collaborated with the CGSR HEV in establishing a global surgery research hub in Veracruz, Mexico. The main goal of the NIHR is to build sustainable research and training capacity together with LMICs around 4 main themes: cancer, surgical site infection, perioperative care and access to surgery. These themes are identified on annual prioritization workshops on which participants adhere to the ethos of the group: inclusive and collaborative research with a horizontal hierarchy. The NIHR GSU Veracruz is one of 6 international hubs, funded and supported by the National Institute of Health Research Overseas Development Aid. These research hubs are established in larger, usually urban hospitals. Each hub acts as an independent research centre, running clinical trials and cohort studies, and supporting research training and education within its local context. The hubs receive resources to support the delivery of research and training at other 'spoke' hospitals. Our group has had an active role in delivering the 3 GlobalSurg international cohort studies that have collected evidence from >40,000 patients revealing global variation in outcomes of emergency abdominal surgery, surgical site infections and surgical outcomes for cancer (11-13). The first international surgical launched by the NIHR GSU is the FALCON trial, a pragmatic multi-centre factorial randomized controlled trial testing measures to reduce surgical site infection in low and middle income countries which is now actively recruiting patients in the 6 hubs across 3 continents. The FALCON trial is set to enroll 5,480 patients. Recruitment was 95% complete at the time of writing this article (14).

One important aspect of this collaboration has been the support given to train surgical researchers in our country. Through our partnerships we have been able to conduct workshops taught by faculty of the Royal College of Surgeons of England and local trainees have been financially supported to enroll on the master of surgical sciences at University of Edinburgh.

With the coronavirus pandemic rising, our network was placed in an optimal position to conduct research and modeling studies that can allow us to understand the impact that COVID-19 can have on patients who undergo surgery. Through a series of studies, CovidSurg will be capturing and sharing real-world data and experiences around the world to help establish the best practices and improve clinical care for these challenging group of patients.

Global surgery is about equity, justice and collaboration.

Research is needed on how to improve IRC on surgery. It is only through collaboration that we can advance this area of knowledge and we can understand the changes that are needed to improve surgical outcomes and access around the world.

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Footnote

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