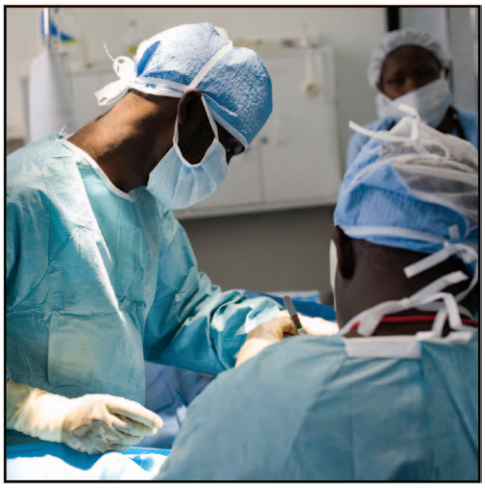
We Need More Reports of Global Health Anesthesia Articles

Mark J. Harris, M.B.Ch.B., M.P.H.

IN the Lancet Commission on Global Surgery's introductory editorial, Meara *et al.*[1] state that "*Surgery and anaesthesia are integral, indivisible components of any properly functioning health system.*" These components, although undoubtedly indivisible, currently appear unbalanced.

A PubMed search for "surgery" paired with the usual indicators of low-resource programs (*e.g.*, "global," "international," "low resource," or "austere") reveals over 400 relevant articles. A search for corresponding anesthesia terms finds 30. Of course, articles in journals from low-income regions address the scholarly practice of surgery and anesthesia without any such global tags. However, the theme of this essay is the apparent paucity of publications regarding collaborative education, funding, or service programs addressing the anesthesia needs in low-income countries (LICs).



"This next generation of global anesthesia practitioners should not have to reinvent the wheel."

There are many reasons that indexed global anesthesia articles are scarce. Many LIC journals publish infrequently, are difficult to obtain, and are not internationally indexed.[2] To address this, there are ongoing collaborations intent on increasing the production, quality, sustainability, and availability of journals from the low-resource world.[3] In the meantime, specialist journals from high-income countries (HICs) consider many such articles too esoteric for their readership. More traditional global health journals often deem anesthesia articles too specialized for their readership. Reports of volunteer experiences are common in the non–peer-reviewed literature.[4] Most are snapshot reports and interesting only for a general readership unfamiliar with the topic. Many reflect the viewpoints of their publishing societies, with little controversy or innovation. Given the recent recognition of surgery as a global health priority (*i.e.*, the 68th World Health Assembly resolution on "Strengthening Emergency and Essential Surgical Care and Anaesthesia,"[5] the Lancet Commission on Global Surgery,[1] and the dedicated surgery volume in the World Bank's "Disease Control Priorities 3"[6]), we may see an increased interest by HIC journals in global anesthesia articles. To take advantage of such enthusiasm, we must address another potential reason for the dearth of publication, that is, the work is not being done. This is not a reference to simple participation in the global health endeavor. Anesthesiologists from HICs are fundamental to a myriad of surgical service missions[7,8] and education, staff-development, and capacity-building programs in LICs.[9,10] Rather, the thesis is that too few HIC anesthesiologists are analyzing their programs and publishing their conclusions. Despite 15 yr of international work, this author's publication history is very limited. This essay is the product of an exploration of this shortfall, its importance, and potential incentives to change.

Despite filling 177 African journals[11] with relevant work, local practitioners are at capacity. With less than 1 anesthesia provider per 100,000 population[12] (compared with 24 per 100,000 in the United States),[13] and workloads of 2,000 procedures per year per provider,[14] anesthetists in LICs have little time for scholarship. Many are not trained in scientific research, and most have limited scholastic resources.[15] Clinicians in HICs, whether academic or private practitioners, have received more training, have greater access to academic institutions, and can dedicate focused time to the problem.

Not only do scholarly collaborations support capacity building in LICs, but, as Søreide *et al.* argue, they provide significant opportunity to "*mutually enhance care for patients with surgical disorders*,"[16] that is, international collaborative research can facilitate quicker patient enrollment to larger studies with more generalizable results, benefitting patients at both ends of the income spectrum. This cannot happen unless HIC anesthetists actively engage in the academic process.

Many expert HIC clinicians, inexperienced in global anesthesia provision, travel to LICs armed with good intentions and donated equipment. Adverse events frequently

Image: ©Thinkstock.

Accepted for publication September 18, 2015. From the Department of Anesthesiology, University of Utah, Salt Lake City, Utah.

 Anesthesiology 2016; 124:267-9

<zdoi;10.1097/ALN.0000000000000954>

ensue.[17,18] Publishing details of programs, models, and philosophies, both successful and unsuccessful, could prevent replication of failed projects. Similarly, widespread dissemination of the tested strategies in global surgery could avoid many detrimental consequences of inexpert participation in humanitarian crisis relief.

Innovations developed by LICs to resolve the shortfalls could be used by HICs with similar issues. For example, modeling suggests that in HICs with an aging patient population, blood supply management must improve,[19] for example, by increasing donor numbers, reducing waste, and reducing transfusion requirements. These are all issues familiar to LIC practitioners. Without recognition of this parallel, and without analysis and publication, potential LIC-to-HIC knowledge transfer will not occur.

Collaborations between high- and low-resource practitioners should be supported by their institutional and national research review boards. Less than 20% of African countries have standards on research agreements with foreign institutions.[20] In creating these principles, nations and organizations must balance limiting data drain[21] against overly restrictive review processes and authorship rules.

In HICs, 91% of anesthesia residents[22] express an interest in global health work. This next generation of global anesthesia practitioners should not have to reinvent the wheel. They require mentors with pedagogical content knowledge to ensure that they develop expertise in a systematic, ethical, and efficient manner. In the United States, the Accreditation Council for Graduate Medical Education mandates that residents "*demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life-long learning.*"[23] Can academic anesthesiologists engaged in global anesthesia do less?

This appeal is not limited to those who work at the universities. Uncounted private practitioners from HICs participate regularly in service and education missions in LICs. They too are encouraged to approach their global work in a scholarly manner. Developing a research project or publication may seem daunting to a nonacademic clinician without relevant public health, advocacy, program development, economic, ethics, or research skills. However, the very nature of this work is such that the required resources and expertise could be made available by any academic institution with a public health program.

The president of the board of directors for Doctors Without Borders, United States, Dr. Deane Marchbein,[24] has called for anesthesiologists to "*play a more significant role in demanding access to anesthesia and surgical care for the millions suffering and dying from surgically treatable diseases.*" Significant neglected roles are as researchers and publishers. Therefore, colleagues in HICs should closely examine those projects in which they are engaged. What has worked, and what has failed? What are you doing now, and what are you doing next? What information would you have found useful when you began? Which parts of your endeavor do you think everyone or no one should copy?

Closing the loop on the research, dissemination, and implementation cycle will require journals committed to the ideal and editorial staff familiar with the field. The anesthesia, general medical, public health, and international development journals must remember that surgery is required for at least 6% of the global burden of disease,[6] that 2 billion global citizens lack access to surgical care,[25] and that anesthesia will be required for 92% of it.[26]

At the root, our common goal is the improvement of anesthesia care in LICs such that all can enjoy the same standards of care as those in the richest regions. Given the lack of financial, equipment, and personnel resources in LICs, innovative strategies to address the economic, supply chain, and education deficits must be explored and shared. Such scholarly information is the vital impetus required to push the field of global anesthesia to the point where the term global becomes meaningless.

Competing Interests

The author is not supported by, nor maintains any financial interest in, any commercial activity that may be associated with the topic of this article.

Correspondence

Address correspondence to Dr. Harris: mark.harris@hsc.utah.edu

References

1. Meara JG, Hagander L, Leather AJ: Surgery and global health: A Lancet Commission. Lancet 2014; 383:12–3
2. African Journal Partnership Project. Available at: http://ajpp-online.org/about/history.php. Accessed August 23, 2015
3. About African Journal Partnership Project. Available at: http://ajpp-online.org/about/objectives.php. Accessed August 23, 2015
4. GHO NEWSLETTER Articles. Available at: http://asahq.org/gho/asa-newsletter-articles. Accessed August 23, 2015
5. WHA reaches agreement on polio, International Health Regulations and strengthening surgical care 2015. Available at: http://www.who.int/mediacentre/news/releases/2015/wha-22-may-2015/en/. Accessed August 23, 2015
6. Debas HT, Donkor P, Gawande A, Jamison DT, Kruk ME, Mock CN (eds.): Disease Control Priorities, third edition, Essential Surgery, volume 1. Washington, D.C., World Bank, 2015
7. Frossard J, Bojarska A: Employment opportunities with international agencies, mission organisations and government hospitals. Anaesthesia 2007; 62(suppl 1):78–83
8. ReSurge International—Ways to Help—Get Involved—Medical Volunteers. Available at: http://resurge.org/ways_to_help/story_medical_volunteers.cfm. Accessed August 23, 2015
9. International anesthesia education forum. Available at: http://anesthesiaforum.org/. Accessed August 23, 2015
10. Medical Volunteers: Apply Now. Available at: http://www.ivumed.org/how-you-can-help/medical-volunteers/. Accessed August 23, 2015
11. African Index Medicus Journals. Available at: <http://indexmedicus.afro.who.int/Journals/Indexj.htm>. Accessed August 23, 2015

12. Dubowitz G, Detlefs S, McQueen KA: Global anesthesia workforce crisis: A preliminary survey revealing shortages contributing to undesirable outcomes and unsafe practices. World J Surg 2010; 34:438–44
13. Egger Halbeis CB, Schubert A: Staffing the operating room suite: Perspectives from Europe and North America on the role of different anesthesia personnel. Anesthesiol Clin 2008; 26:637–63, vi
14. Lebrun DG, Dhar D, Sarkar MI, Imran TM, Kazi SN, McQueen KA: Measuring global surgical disparities: A survey of surgical and anesthesia infrastructure in Bangladesh. World J Surg 2013; 37:24–31
15. Hodges SC, Mijumbi C, Okello M, McCormick BA, Walker IA, Wilson IH: Anaesthesia services in developing countries: Defining the problems. Anaesthesia 2007; 62:4–11
16. Søreide K, Alderson D, Bergenfelz A, Beynon J, Connor S, Deckelbaum DL, Dejong CH, Earnshaw JJ, Kyamanywa P, Perez RO, Sakai Y, Winter DC; International Research Collaboration in Surgery (IRIS) *Ad-hoc* Working Group: Strategies to improve clinical research in surgery through international collaboration. Lancet 2013; 382:1140–51
17. Jobe K: Disaster relief in post-earthquake Haiti: Unintended consequences of humanitarian volunteerism. Travel Med Infect Dis 2011; 9:1–5
18. Chu K, Stokes C, Trelles M, Ford N: Improving effective surgical delivery in humanitarian disasters: Lessons from Haiti. PLoS Med 2011; 8:e1001025
19. Williamson LM, Devine DV: Challenges in the management of the blood supply. Lancet 2013; 381:1866–75
20. Uthman OA, Wiysonge CS, Ota MO, Nicol M, Hussey GD, Ndumbe PM, Mayosi BM: Increasing the value of health research in the WHO African Region beyond 2015—Reflecting on the past, celebrating the present and building the future: A bibliometric analysis. BMJ Open 2015; 5:e006340
21. Churchill RE: Preventing data drain: An international project. Sci Ed 2002; 25:115–7
22. McCunn M, Speck RM, Chung I, Atkins JH, Raiten JM, Fleisher LA: Global health outreach during anesthesiology residency in the United States: A survey of interest, barriers to participation, and proposed solutions. J Clin Anesth 2012; 24:38–43
23. Accreditation Council for Graduate Medical Education: Common Program Requirements. Available at: http://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/CPRs2013.pdf. Accessed August 23, 2015
24. Marchbein D: Humanitarian surgery: A call to action for anesthesiologists. Anesthesiology 2013; 119:1001–2
25. Casey KM: Putting the "global" back in global health. Arch Surg 2012; 147:404–7
26. Harris MJ, Kamara TB, Hanciles E, Newberry C, Junkins S, Pace NL: Assessing unmet anesthesia need in Sierra Leone. Afr Health Sci 2015; 15:1028–33