The Role for International Outreach in Hand Surgery

Karen Y. Chung, MD*

Internationally, surgery is making its mark as a necessary priority in Low and Middle Income Countries (LMICs). In 2013, Paul Farmer, MD, and international leaders from 14 countries founded the Lancet Commission of Global Surgery to develop and assemble the best evidence on the state of surgery worldwide, to study the economics of surgical and anesthesia care delivery, and to develop strategies for improving access. Concurrently, there is growing interest in hand surgery. The *Journal of Hand Surgery (European Volume)* recently called for LMIC research with the goal of using their resources to improve the end product. International outreach was further prioritized at the American Society for Surgery of the Hand, with Scott Kozin, MD, and colleagues subsequently launching the Touching Hands Program (THP). Insight into current models, proven benefits, emphasis on quality, and research in international hand surgery will help invested volunteers provide high-quality, safe, and innovative solutions in the global hand surgery landscape. *(J Hand Surg Am. 2017;■(■):■−■. Copyright © 2017 by the American Society for Surgery of the Hand. All rights reserved.)*

Key words Pediatric hand surgery, global health, poverty, developing countries, pediatric hand trauma.

BACKGROUND

Internationally, surgery is making its mark as a necessary priority in Low and Middle Income Countries (LMICs). In 2013, Paul Farmer, MD, and international leaders from 14 countries founded the Lancet Commission of Global Surgery to develop and assemble the best evidence on the state of surgery worldwide, to study the economics of surgical and anesthesia care delivery, and to develop strategies for improving access.[1] The next year, this became a priority for the World Health Organization, bringing 138 countries together at their sixty-seventh annual meeting.[2]

*From the *Division of Plastic and Reconstructive Surgery, University of Toronto, Toronto, Ontario, Canada.*

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Corresponding author: Karen Y. Chung, MD, Division of Plastic and Reconstructive Surgery, University of Toronto, 149 College St., 5th Floor, Room 508, Toronto, Ontario, Canada M5T 1P5; e-mail: ky.chung@mail.utoronto.ca.

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Concurrently, there is growing interest for international outreach in hand surgery. The *Journal of Hand Surgery (European Volume)* recently called for LMIC research with the goal of using their resources to improve the end product.[3] In 2014, international outreach was prioritized at the American Society for Surgery of the Hand, with Dr. Kozin and colleagues launching the Touching Hands Program (THP).[4]

The opportunity for THP to provide high-quality surgical care to LMICs is exciting. During this early stage, there is the opportunity to build upon the extensive international outreach experience from other specialties and minimize harm.

Insight into current models, proven benefits, emphasis on quality, and research in international hand surgery will help invested volunteers provide high-quality, safe, and innovative solutions in the global hand surgery landscape.

CURRENT MODELS

Four models are currently in place. The first is the most common, currently known as "direct supply" or "vertical approach."[5,6] This "ready-to-deliver"

package of high-quality surgical care can be easily scaled, can efficiently deliver resources, can be useful in urgent humanitarian responses to disasters, and is relatively attractive to surgical volunteers because of the short project duration.[5] However, it may also lead to uncoordinated interventions, inhibit development of hospital infrastructure, compromise country autonomy, and alienate patients whose health care needs exceed the narrow range of provided services.[5,6]

The second model facilitates surgeon or patient transfer to a higher-income country for training or care, respectively. Examples include Facing the World, or the Global Medical Relief Fund.[4,5,7] The obvious advantage is that high-quality training and care can be provided. However, there is the risk of "brain drain."[5] With regard to patient care, the impact remains limited, emphasizes dependency on international charity, and is unsustainable.

The third model is known as a "horizontal approach."[6] This emphasizes long-term investments in the health care infrastructure and strengthening health care systems for all current and future patients.[6] The disadvantage is the length of time for implementation, dependency on government support, and objective metrics for success, which are difficult to define.[6]

Finally, the fourth is known as "diagonal development" and can currently be considered the ideal.[6] This approach finds synergy between the immediate advantages of vertical inputs and the long-term benefits of the horizontal aims.[6] It focuses on a long-term presence, multidisciplinary follow-up, needs-driven patient selection, bilateral exchange between interprofessional staff, enhancing visiting trainee experience in global health care delivery and local trainee experience in surgical practice, academic emphasis, transfer of research skills, and self-sustainable infrastructure.[6] Successful implementation leads to overflow of qualified local health professionals empowered to provide care to other communities in need.[6,8,9]

THE BENEFITS OF INTERNATIONAL OUTREACH

Millions of patients have benefited from international surgical outreach around the world. At the 25-year mark, Operation Smile served over 100,000 patients in over 25 countries.[8] Their continuous commitment to support local sustainable foundations with the same organizational ideals has led to operations in over 22 countries throughout Latin America, Africa, and Asia and provided the means to conduct free, local humanitarian missions.[9] Furthermore, local medical professionals, empowered through self-sufficient programs and the imbued volunteer spirit, gradually replaced their international partners, extending the reach of care.[9]

The positive benefit can move beyond the patient to empower local hospitals and communities. Building into local institutions, like that of Narripokkho, a nongovernmental organization in Bangladesh focused on burn care can help optimize current facilities.[10] Foreign surgeons donating resources and time to improve those who are disabled and disfigured have changed public opinion and reduced stigma.[10]

National surveys have found that North American surgical residents have a substantial interest in international training.[11] A properly designed and mentored experience in surgical volunteerism provides a unique forum for intensive instruction and application of knowledge to patient care.[12] This experience creates a unique cultural and health care setting that requires excellent interpersonal and communication skills and the utmost in professionalism.[12] There is personal enrichment, reminding surgeons why they pursued this career. Often, the improved clinical skills practicing under limited resources can be translated into cost-conscious practice.[13] Finally, there is further appreciation for global health disparities and improved cultural sensitivities, awareness, and competence.[13]

THE IMPORTANCE OF QUALITY IN INTERNATIONAL OUTREACH

Outreach programs have reflected on their past experiences and expressed concerns in 3 areas: the patients, the host institution, and the health care system.

The infamous "body count" is quoted, in which fewer than 100 cases per mission can seem unacceptable to team leaders.[14] Ignoring informed consent, performing operations abroad that one would not do at home, inattention to intensive care capabilities, or tackling particularly difficult cases with outdated supplies and inappropriate follow-up has destroyed relationships and created a stigma around the term "volunteerism."[15,16]

Culturally sensitive dynamic relationships with the host institutions are also important. A lack of understanding of local surgeons and local anesthetists and underestimating their abilities can lead to foreigners as being perceived as aggressors rather than peacemakers.[5,17] Then, leaving local doctors to do the follow-up care for many of postoperative patients