Global Neurology
The Good, the Bad, and the Ugly

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KEY POINTS

- Neurologists should abandon isolated or short-term medical missions which can and do cause harm, reinforce healthcare disparities, and impede medical care in the regions where it is so desperately needed.
- Integrating neurology with global health requires ethically congruent, multisectoral, inter-disciplinary, collaborative partnerships to establish sustainable training programs in low- and middle-income countries.
- Successful training programs align with local needs and conditions, engender support from local health systems, and are amenable to monitoring and evaluation for improved outcomes, efficiency, and growth.
- Healthcare quality must be improved in tandem with quantity while advancing triangular and South-South collaboration to ensure self-sufficiency.

GLOBAL HEALTH: WHY GO BEYOND OUR BORDERS?

The need to be a global consideration is an age old question debated for as long as global health has been a nascent thought during the 16th and 17th centuries age of colonialization. As European countries began to explore new lands like India, China, and the African continent, settlers encountered and returned to Europe with new medical

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maladies motivating physicians to search for cures and their eradication. Since that early period of tropical medicine, the arguments for and against global health have flourished. Those who argue against global health engagement contend that disease and health disparities within one's own borders must be solved before diluting limited resources by exporting health care to other countries. Advocates for global health engagement argue that "local" versus "global" health care is a false dichotomy and focus their attention on the reciprocal benefits of improving health care in both regions. Global health proponents posit engagement as a moral obligation to the international community centered on distributive justice and point to the importance of building capacity to defend against pandemics and minimizing economic risks by improving health on a wider scale, thereby limiting communicable illnesses and ill health.[1–3] Although the argument continues, the reality is that global health programs (GHPs)—government, non-government organizations (NGO), academic, religious, and private for profit—are well entrenched and will not disappear, if for no other reason than the world's intimate interconnectedness and the recently amplified vulnerability to epidemics and pandemics. The real issue in global health is not whether such programs should exist but how to maximize their benefits while mitigating potential harms.

THE RISE OF GLOBAL HEALTH PROGRAMS

Nineteenth-century tropical medicine shifted from missionary physicians and colonial medical services to British and European research institutes and, following widespread government intervention after the United Nation (UN) established World Health Organization (WHO) in 1948, evolved with national and international commissions adopting vertical or parallel programs narrowly targeting specific diseases in one or a few countries (including yaws, tuberculosis, malaria, and poliomyelitis).[4]

Secular missions increased after the 1978 WHO Alma Ata Declaration[5] with the emergence of horizontal primary care models, leading to predominantly NGO or government affiliated programs in the 1980s to 1990s. These have expanded to specialty programs, many embracing elements of both approaches[6,7] and were labeled "global health," a term eluding precise definition[8–14] but promoting the mission to improve health[15] within and among countries[16] by eliminating inequities,[17] addressing social determinants of health,[18] and encompassing endeavors such as security and diplomacy.[19,20]

The two decades preceding the 2019 Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) pandemic witnessed an unprecedented expansion of GHPs, attributable to a constellation of historical, economic, cultural, and religious influences in the milieu of globalization and heightened awareness of health care disparities,[21] accelerated by the United Nations Millennium Declaration 2000[22] and later its 2030 Agenda for Sustainable Development (Agenda).[23] North American academic institutions experienced a more than 10-fold increase in GHPs during the first decade of the millennium,[24,25] leading to some form of global health education in 146 of 153 (95%) surveyed medical schools,[26] with one-third of graduates participating in global health activities.[27]

These GHPs are often fragmented, vertically oriented, lack common standards and competencies, and are predicated on unregulated short-term medical missions (STMMs),[28] an appellation lacking universal definition but viewed as isolated visits from a high-income country (HIC) to a low- or middle-income country (LMIC) for a few days or weeks, exclusive of disaster or conflict services, military practices, or compensated relief missions.[29–32]

STMMs are highly beneficial to the sending institution, providing a heightened profile in academic circles, generating novel research data and, most importantly,

securing a share of the widespread global health funding from governments, foundations, and philanthropic organizations.[33] These missions are often not aligned with host community needs and preferences,[34–37] operate without standards or accountability,[38,39] generally fail to provide any substantive benefit to the host nation and, in fact, can and do cause actual harm, reinforcing health care disparities by impeding medical care in the very regions it is most needed.[40–44]

Early critics described volunteer doctors turning up "*to do good*" as undermining health care in the community, engaging in inappropriate treatment, with ignorance of local diseases, culture, and language.[45] Others noted that locals were used as "*experimental fodder*" to improve visitor skills.[46] Isolated visits were described as "*nothing more than a glorified form of tourism wrapped in a veneer of altruism, with no sustainable benefits for the receiving communities*."[47]

Although there may be some benefit to select isolated missions in particular settings, notably conflict or disaster relief, or surgical programs engaging in capacity building, a growing body of literature underscores the ethical challenges and legal concerns related to STMMs. However, this literature is limited by the paucity of evidence on prevalence, patient safety, mission impact, and regulation due to the absence of universal guidelines, standards, or accountability.[48,49]

ETHICAL CHALLENGES LEADING TO HARM

The primary goal for any GHP engagement must be improvement of the health and well-being of the host—the individuals and communities that have invited the participants. The visiting health care participants benefit by gaining awareness of global health issues, enjoying travel excursions to exotic locales, advancing clinical skills, enhancing resumes, and the professional and self-satisfaction from tending to those in need. This "experience" is heavily one-sided, and each GHP is also burdened with philosophical, ethical, and legal challenges that must be foremost in the minds of each program participant.[50–52]

These challenges run the gamut, many stemming from the misguided perception that "something is better than nothing," an understandably naive response to the overwhelming poverty in developing regions. They may be merged into a few recurrent themes documented in hundreds of studies, reports, and surveys, including a literature review of 230 articles spanning a 25-year period, numerous anecdotal accounts, and the GlobalNeurology® Partners' experiences, broadly characterized as causing harm to patients and the host community, reinforcing health care disparities, and wasting valuable resources.[53–62]

Accurate diagnoses and appropriate treatment recommendations require knowledge of indigenous diseases, an understanding of the local health system, recognition of language barrier limitations, and a contextual appreciation of social, cultural, economic, and political situations.[63]

Physicians lacking training or experience in resource-limited settings may therefore be ill-suited to provide effective, meaningful care by failing to recognize how well-intentioned recommendations may be inefficient, culturally inappropriate, resource incompatible, and in conflict with the local standard of care. Their care may undermine the host and set the stage for harmful practices.

The physician may view STMMs as an opportunity to perform techniques or procedures beyond what would be permissible at home or may simply feel compelled to act due to overwhelming needs and limited or absent supervision. In one study of 223 respondents, one-half reported being asked to perform beyond the scope of their training, and over 60% of those surveyed admitted doing so.[64] Practicing beyond

the scope of one's training is an unethical and harmful practice, unacceptable outside of exigent circumstances such as humanitarian crises. It may lead to malpractice claims or more serious consequences, although such consequences are uncommon in an underprivileged setting with limited regulatory enforcement.[65]

Isolated missions disrupt medical care by requiring usually overburdened local staff to contend with cultural, social, and language barriers while orienting visitors to clinical activities, resource limitations, and personal matters, such as transportation, accommodation, food, and safety issues. Visitors are more often a burden than a help, but hosts may be too polite to object and may continue hosting out of a sense of duty or hope for future support.

Social media may further perpetuate inequities and harm the host through untruthful or misleading reports such as fictitious stories of donations or solicitations for funds based on specious claims of humanitarian work years after a single visit.[51,66] As stated by one global health expert:

Credentialed doctors routinely parachute into poor countries for medical missions that completely disregard local laws and conditions. People think they are doing good, and they have no idea how much harm they can cause. And people back home in the US are often complicit, because when these volunteers write blogs or post videos to share their exploits, 'They're celebrated.'[67]

The literature is replete with examples of poor quality or harmful patient care and the negative impact of STMMs on host communities.[68,69] As summed up by one African hospital staff member, "*I've never seen the contribution, they only waste our time.*"[52] There are nonclinical acts, not always recorded in the literature, revealing the exploitive or "ugly" side of global health. For example, publishing staged photographs of Ethiopian neurologists without permission to solicit donations and failing to account for those funds. Or demanding a host send an invitation letter requesting a grand rounds lecture to surreptitiously provide "justification" for grant-funded vacation travel.

From a practical standpoint, the multiple billions volunteers spend every year traveling the world for a "meaningful" global health experience may be better spent on critical infrastructure and training local health care workers.[70] A 10-person medical team spent USD 30,000 on travel and lodging for one trip to Ghana, half the cost of building a 30-bed hospital.[71] The amount spent on team T-shirts for a visiting delegation would have funded a First Aid station for a year.[72] Misuse of grant money diverts funds that would otherwise aid target countries.[73]

GUIDELINES TO MITIGATE THE HARM

An increasing number of organizations have published guidelines, position statements, and directives to mitigate these STMM harms,[74] and whether based on ethical concerns, guiding ethical principles, a practical view of visitor–host relationships, or more commonly a combination thereof, most share a pervasive disregard for host input that violates traditional bioethical principles and eviscerates the intent, goals, and sustainability of global health engagement.[75–84]

A 2018 review of 27 guidelines,[85] including the Working Group on Ethics and Guidelines for Global Health Training,[86] demonstrated a broad consensus on ethical principles for STMMs, yet the majority (23 of 27) failed to consider host views and almost half never called for or consistently engaged with a host.[87] The American College of Physicians Position Paper,[88] which failed to include a single author from a LMIC, and the Brocher Declaration,[89] authored by an offshoot group from the Consortium of Universities for Global Health,[90] itself criticized for neglecting the South,[91] endorse commendable ethical principles despite promoting STMMs, but they discount

reciprocity, downgrade capacity building, and conflate sustainability goals with veritable sustainability. A 2023 review of 35 studies extracted seven core principles aligned with most other ethically driven position statements, but less than half of these studies reported collaboration with the host communities.[92]

A systematic review of 17 studies from the perspective of almost 400 hosts in 25 LMICs corroborated this overriding failure to include the target countries' views, while noting the hosts' preferences for longitudinal relationships based on communication, mutuality, and reciprocity, leading the investigators to emphasize the importance of formalized partnerships with collaboration and predeparture training.[93]

These guidelines and statements are predominantly iterations of bedrock ethical principles that should underscore every physician's behavior such as working to improve health by addressing host-defined needs, demonstrating cultural respect, minimizing burdens, engaging in predeparture preparation, and not practicing beyond the scope of training.[94] However, the impact of these principles on STMMs is questionable.[87] Evidence suggests that most guidelines are not followed in practice,[93] which is not surprising as methods of regulation, reporting, and enforcement do not exist.[87,95,96]

Despite these limitations, there are calls for more guidelines, more mandates, and more position statements. One review suggested, "*Clear guidelines are needed to create global standards to ensure that the services delivered are beneficial not only to patients, but also more broadly to the healthcare systems of recipient countries.*"[62] Another concluded, "*There was a need to draft a code of practice creating guidelines that better integrate host country perspectives.*"[97]

The concept of a universally acceptable guideline is laudable but may not be possible. Guidelines must be tailored to ensure sociocultural alignment and integration with economic priorities and should address the needs of the local health system, which differ among countries and may vary within different regions of the same country. Guidelines must comport with specific characteristics of the visiting team, whether NGO, university, government, or religious organization, and whether medical or surgical. They need to address the scope of the mission, mutually agreed on goals, the background and training level of participants, and associated collaborative partners.

There are core principles applicable to all organizations, specialties, and regions that may be reduced to a universal directive, departing from STMMs and underscoring the importance of long-term collaboration with capacity building and reciprocity:

There must be an ethically-congruent collaborative approach with proper contextual preparation and training, focusing on the hosts' needs, addressing those needs in written agreements engaging all parties, recognizing and accounting for the disparity in relationships between partners, to establish realistic and mutually agreed upon long term sustainable goals that are designed to advance patient care, physician training, and medical research, focusing on priorities of the South, with transparency and accountability, ensuring full reciprocity, and encouraging triangular and South-South cooperation, with definitive plans for self-sufficiency.[98]

This overarching guide may be refined to meet the needs of individual professional societies and, with effective oversight and regulatory enforcement, would spell the end of many harmful practices. Guidelines should comport with the UN Strategic Development Programme 2022 to 2025.[99] The literature highlights governing options, but further discussion is beyond the scope of this article.[58,100]

LEGAL CONCERNS

This article is limited to reviewing a few legal concerns affecting visitors engaging in missions.[101] GHPs are obligated to abide by host country laws and regulations that

are applicable to the program's form of organization.[102] It is incumbent on each program participant or visitor to comply with the host country's legal and regulatory framework. Too often visitors fail to inquire about the situation, disregard the requirements, or presume the laws will not be enforced, expecting the host to assume responsibility and provide blanket protection.

Host country laws that should be considered vary by country but span from entry visa regulations to rules governing patient interactions such as informed consent standards and medical records requirements. Practitioners should be aware of and abide by the relevant laws when visiting a host country and not assume LMICs lack regulatory infrastructure. In fact, it is instructive to review a commonplace example demonstrating that LMICs may have robust medical practice laws.

Patient confidentiality—grounded in ethics, developed in common law, and later codified[103]—is a core principle of medical practice steadfastly protected in developed countries.[104] Visitors presuming confidentiality to be a trivial matter in LMICs are bound to run afoul of the law and place their hosts in legal jeopardy. In Ethiopia, for example, the *Medical Ethics for Doctors* regulations include a "medical secrecy" section stating, in part, "*The doctor shall maintain her/his professional secrecy in respect for all matters . . . in the course of her/his duties to the patients.*"[105] This is enforceable through the Health Professionals Ethics Committee[106] established pursuant to the Food, Medicine, and Health Care Administration and Control Authority (FMHACA) Council of Ministers Regulations,[107] which separately has explicit confidentiality regulations[108] with authority to propose sanctions for unethical or substandard conduct ranging from suspension of licensure to criminal charges.[109]

Medical licensure

Many countries require volunteer physicians to possess temporary or provisional licensure, registration, or approval from the local Ministry of Health or professional licensing board. Ethiopia,[110,111] Kenya,[112] and Tanzania[113] have licensure requirements for foreign volunteers; Uganda[114] and Rwanda[115] require a provisional license; Zimbabwe[116] requires a letter of permission; Nigeria[117] invokes criminal punishment for foreigners practicing without registration; the Caribbean Association of Medical Councils has varying requirements[118]; and the Association of Southeast Asian Nations requires licensure.[119] Visitors ignoring local licensing regulations place the host at risk of sanctions and may themselves be subject to the vagaries of a foreign court system with the potential for criminal or civil complaints.[120] Following applicable licensing laws represent the hallmark of an ethical, responsible engagement, repeatedly supported in guidelines and position papers.[121]

Medical Malpractice

Medical malpractice is an increasing concern worldwide due to an expanding litigation culture leading to an increasing number of claims against physicians.[122] There are limited case reports because the hurdles of accessing courts in many jurisdictions lead to informal settlement. Even in a resource limited nation such as Ethiopia, with a complicated civil law system allowing claims in tort, contract, or criminal law, there are lawyers advertising to accept cases. Malpractice claims in Ethiopia have increased over the past decade.[123–125] This legal landscape is particularly concerning when visitors with inadequate local knowledge and preparation engage in patient care, and host physicians lack experience with the visitors' procedures or treatment, opening the door for negligence claims against either or both parties. The host faces the greatest risk of sanctions or fines. In Ethiopia, the FMHACA specifically states that an institution accommodating a visiting professional must "*bear*

civil responsibility for any damages caused by health services provided by the pro-fessional."[126] Some jurisdictions have a liability exemption for volunteer acts car-ried out in good faith, if the provider is "*properly licensed and certified to perform the task required*," and there was no recklessness, criminal act, or use of drugs or alcohol, but this protection may be limited to citizens, not foreign nationals.[127]

Donations

Donations of medical equipment and pharmaceutical supplies are also problem-atic.[120] There are special concerns with equipment—whether it is contextually appropriate, relevant to local needs, able to be properly maintained, and if accept-ing the equipment places the host at risk of violating importation, taxation, and registration laws. Pharmaceutical donations raise complex regulatory issues inter-secting multiple legal frameworks in the United States and host countries that are best managed through legal guidance in both countries. There are ethical and med-ical concerns with visitors importing the latest antiseizure medications or a supply of botulinum toxin and left in the hands of local medical staff unfamiliar with their proper use and potential complications, including interactions with traditional treat-ments. Local staff is also left to manage a difficult situation when the limited sup-plies run out.

Many concerns would be preempted by directing inquiries to the host in advance to ensure an agreed on donation complies with all local laws and regulations. The WHO recognized that donations can "*constitute an added burden to the recipient health care system*" and in coordination with several international health organizations, the UN, and the World Bank, established specific guidelines addressing the problem,[128] which comport with earlier policies that donors must "*respect the laws, regulations, and administrative procedures of the recipient country*."[129]

Medical Research

Medical research endeavors, driven by economic or academic interests that risk exploiting vulnerable populations, raise myriad complex ethical and legal concerns, spanning informed consent through to data extraction and authorship agreements. Extensive international policies, statements, and guidelines address many of these research concerns and are designed to ensure an ethical balance of interests.[130,131] Researchers from abroad and their local hosts should consult relevant standards in both the sending and host countries before embarking on research ventures.[132]

WHAT ABOUT GLOBAL NEUROLOGY?

The emergence of global neurology, at a time of heightened interest in global health and with neurological diseases acknowledged to be a pressing concern in LMICs, pro-vides a unique opportunity for neurologists to adopt best practices. These should emanate from global health colleagues, leverage the pandemic disruptions, and focus on improved access to sustainable neurological care for the world's most vulnerable patients.

An Emerging Field

US neurologists have embraced global health. Some residency training programs offer clinical electives in LMICs. Numerous funding opportunities for global health research and a wide range of part and full-time career options have emerged.[133] The American Academy of Neurology (AAN) established a Global Health Section, sponsors a monthly Global Health webinar, highlights Global Neurology Research Updates, coordinates

Global Neurology lectures at annual meetings, and publishes a 'Global Neurology' section in the flagship journal.[134] It is one of six affiliated regional neurological associations holding membership in the World Federation of Neurology under the auspices of "Global Neurology."[135] By endorsing global neurology, the AAN is well positioned to coordinate meaningful guidelines and position statements to advance care where it is most needed.

Integrating Neurology with Global Health

The fundamental goal of global health is to reduce or eliminate health inequities.[136] Inequities are varied and attributable to diverse factors specific to particular regions and are shaped by local values and ideologies. The underlying commonality is a lack of access to health-related services, fostering ill-health and exacerbating poverty in a mutually reinforcing cycle with multiple interconnected, contributory, and reciprocal factors, including the negative impact of poverty on health, resulting in excessive maternal, neonatal, and childhood morbidity and mortality, ongoing high rates of infectious diseases, and the greatest burden today, which is "[untreated] *non-communicable diseases that are forcing millions of people into poverty annually.*"[137]

The most disconcerting noncommunicable diseases are the neurological conditions, such as stroke, epilepsy, and dementia, which have an extraordinarily high rate of morbidity, afflicting millions of people, resulting in both poor cognition and physical impairment. Such diseases render the affected individuals unable to reach their full potential, with lost income and fewer opportunities, leading to increased vulnerability, marginalization, and exclusion, resulting in overwhelming psychological suffering as well as medical and social needs.[65,138] These neurological disorders, disproportionately increasing in incidence in LMICs,[139,140] profoundly impact the economic, social, and political stability of the country and represent the "*greatest threat to global public health*."[141]

This is precisely why the Agenda[142] Sustainable Development Goal 3 ("*ensure healthy lives and promote well-being at all ages*"), subsuming nine substantive and four secondary targets, underpinned by the goal of advancing *inter alia* "*access to quality essential healthcare services*,"[143] aims to "*reduce by one-third premature mortality from non-communicable diseases.*"[144] This goal aligns with the WHOs recently enacted Intersectoral Global Action Plan on Epilepsy and Other Neurological Disorders 2022 to 2031 (IGAP).[145]

The remaining questions are where to start and how to most effectively advance access to neurological services.

Where to Start?

The Agenda provides guidance on where to start: "*reach the furthest behind first*,"[146] meaning the least developed nations,[147] which are predominantly in sub-Saharan Africa (SSA), on a continent of 1.5 billion people harboring one-quarter of the global burden of disease, less than 2% of the world's health care professionals, and consuming less than 1% of the global health care expenditure.[148] These regions have inherently vulnerable populations and present special challenges requiring particular attention[149] to ensure that each person receives "*the highest attainable standard of health as a fundamental right*."[150]

How to Improve Access to Neurological Care?

Neurologists should abandon STMMs, which are a waste of limited health care resources expended on ephemeral efforts providing no enduring solution. GlobalNeurology recommended this sweeping change over a decade ago, drawing vehement

opposition from some US academic neurologists[151–155]; however, our position was later supported by global neurology experts adopting a long term collaborative approach in developing successful neurology programs in Haiti[156] and Zambia.[157]

The single most effective method for improving access to sustainable neurological care is to increase the recruitment, development, training, and retention of neurologists and related health care workers in LMICs.[158] This approach provides a cross-cutting impact on the myriad substantial impediments inherent in resource-limited regions,[138] aligns with the Agenda,[159] is supported by the WHO,[160] and is endorsed through the IGAP objectives and global targets.[161]

The global neurologist must enter a long-term, ethically congruent, collaborative partnership with an established health system or medical school wishing to initiate or advance neurological services. Such a partnership can lay the foundations for a training program comporting with local needs and conditions that is supported by the local health system, and is amenable to monitoring and evaluation for improved outcomes, efficiency, and growth.

There must be a willingness to participate in a network of multisectoral, interdisciplinary partnerships, established deliberately, ethically, and collaboratively, focusing on capacity building to achieve self-sufficiency. Such programs must train local physicians working in local conditions to treat local diseases. This approach improves care, services, and education while protecting fragile, overwhelmed medical systems and vulnerable populations. It avoids donor-based protection policies that provide no substantive benefit and are destined to fail.[162]

Multisectoral Triangular Collaboration

The academic programs focusing on unidirectional propagation or bilateral engagements with limited reciprocity may not be interested in a multi-institutional, multisectoral plan with triangular or multilateral collaboration facilitating South-South initiatives, yet such a plan is essential to advance the cross-cutting nature of the Agenda, bringing modern sustainable health care to the areas of greatest need—the "furthest behind."[163]

Multi-institutional involvement is fundamental to successful development of a training program. Different institutions offer complementary services, strengthening the host program, leading to specialized clinics and expanded research opportunities. However, this approach requires careful attention to potential hurdles such as redundant services, failed reciprocity, or one university adopting a proprietary stance.

GlobalNeurology® illustrates the importance of adopting a highly collaborative and multi-institutional approach. This NGO is accredited by the WHO, in Special Consultative Status with the UN Economic and Social Council, and represents an international partnership[164] of neurologists, neurosurgeons, and neuroethicists, with a mission to advance sustainable neurological care in resource limited settings. It holds a long-standing relationship with the Addis Ababa University (AAU) Department of Neurology Residency Training Program ("Program") in Ethiopia, which provides a backdrop for some of the views, opinions, and examples in this article.

In 2006, Ethiopian neurologist Professor Guta Zenebe spearheaded the Program, backed by AAU and the Ethiopian Ministry of Health, with strong international support from both the Mayo Clinic led by Dr James Bower and GlobalNeurology® led by Dr James C. Johnston, and later collaborations with several universities, NGOs, and private institutions. The AAU Department of Neurology governs the Program, which is now self-sufficient, having graduated 81 board-certified adult neurologists,[165] most practicing in Ethiopia and, more importantly in a nation of 120 million people where there may never be enough neurologists, teaching the primary care physicians how

to manage common neurological conditions. The Program also trains physicians from other African nations, thereby taking an innovative lead in triangular and South–South cooperation.[23]

The following examples highlight a few GlobalNeurology® engagements with the Program during a brief window before the pandemic, noting that all activities were requested by, coordinated with, and approved through the AAU Department of Neurology. These very fundamental considerations underscore the importance of communication and addressing the hosts' needs.

The Partners provided regularly scheduled on-site teaching, remaining available remotely between trips, and coordinating neurologists from the European Union, Israel, Norway, the United Kingdom, and the United States to teach. GlobalNeurology® developed collaborations with multiple universities to advance the Program including University of Siena, Italy; University of Bergen, Norway; University of Cape Town, South Africa; University of Geneva, Switzerland; and Ankara University, Turkey. These were established for specific reasons. For example, the University of Siena provided an annual neurophysiology fellowship. Clinical rotations were provided in Australia, South Africa, and Turkey. An Israeli neurology team was invited to establish a pediatric epilepsy clinic in northern Ethiopia. Other capacity building efforts included mentoring research projects and supporting other universities, institutions, or NGOs, developing an electroencephalogram (EEG) technician school in northern Ethiopia, a pediatric nursing forum, and a rehabilitation program.

GlobalNeurology® represents the Program at various WHO, UN, and other international meetings. Advocacy is important, and presenting the Program at annual global conferences builds relationships, which may lead to partnerships, resident scholarships, or equipment donations.

This comprehensive, collaborative approach is not only successful, as evidenced by the Ethiopian Program, but critical for advancing neurology in SSA, where the current ratio of one neurologist for every 3 to 5,000,000 people is far below the WHO recommended ratio of 1:100,000 and the HIC ratio of 4.75:100,000 people.[166]

South–South Collaboration

South–South cooperation is vital to improving health care access in a sustainable cross-cutting manner leading to self-sufficiency.[167] A quintessential example is the highly successful and innovative African Paediatric Fellowship Programme directed by Professor Jo Wilmshurst at the University of Cape Town, South Africa.[168] This program includes training collaborations with 15 African countries. Referring partner centers recruit trainees for targeted training in critical areas of pediatric health care. Training is predominantly undertaken in South Africa, but end-stage capacity building is finally being reached and other training hubs are being established across the continent, most recently in Kenya. There is a 95% retention rate of trainees returning to deliver care and take on leadership roles in their home setting.[169] This program is crucial to the development and expansion of child neurology and other pediatric specialties throughout Africa.

Quality in Tandem with Quantity

The quality of health care is fundamental to health equity and must be improved in tandem with quantity as poor quality obviates the benefits of increased access, wastes valuable resources, and causes actual harm through inverse, unsafe, fragmented, and misdirected care.[162] Poor quality care is now a greater contributor to mortality than limited access to health care. The Global Health Commission on High-Quality Health Systems concluded that 5.7 million people in LMICs die every year from poor quality health care compared with 2.9 million dying from lack of access.[170–172] Improving quality requires

input from multiple, diverse stakeholders in each country and necessitates reforms impacting all levels of public and private health services. There is a need to address governance structures, service delivery, educational processes, and accountability methods, representing an extraordinarily complex topic that is beyond the scope of this article.[173]

Good Intentions Not a Substitute for Ethical Actions

The academic global neurology rotations which send trainees to an LMIC for a few days or weeks annually are tantamount to repetitive isolated missions and fail to provide any substantial capacity-building. This approach represents a paternalistic view of global health development.

In a recent survey of neurology residents who completed a "*global health experience*," the majority reported gaining improved clinical and examination skills, gaining an understanding of different health systems, and "more judicious use of resources upon returning to the United States," leading to the conclusion, "*Global health electives had a positive impact on neurology trainees*."[174] However, did anyone survey the hosts? What did they receive?

Arguments that 83% of the trainees reported a "*deeper commitment to underserved populations*"[65] may suggest good intentions, but that neither substitutes for ethical actions nor benefits the host. A recent AAN Global Health blog underscored this survey with suggestions to "*create a platform by which students, trainees, and faculty interested in having an education experience in another country may be able to find a list of rotations or observerships*."[175] Again, the intentions are undoubtedly noble, but this approach is antithetical to ethical global health endeavors.

The focus must be on the needs of the host which should be defined by the host. Rotations or observerships may have a role in established host programs, but this will only be the case if there exists a collaborative institutional engagement with mutual benefit and reciprocity.[176,177]

SUMMARY

Several million words concerning global health have been written in books, journal articles, professional society recommendations, consortium position papers, and by government and NGOs involved in global health endeavors. Virtually every conceivable scenario has been analyzed. The literature is far too dense to cover within the confines of this introductory article, aside from providing a few references and identifying readily available resources to promote reconsideration of what is available.[178] Global health services can be enhanced to accommodate the real needs of the recipients of the largess that achieves more than the personal gratification of the providers.

In reality, global health ethics—the framework for advancing health equity—despite the millions of words already written on this topic, the newly invented terminology, the intricate moral value arguments, the deepened ethical understandings, and the multiplicity of guidelines, can be summarized easily through words written more than 250 years ago by the German Enlightenment philosopher Immanuel Kant: "*So act that your principle of action might safely be made a law for the whole world.*"

The English puritan preacher John Bunyan, famous as the author of the allegory *The Pilgrim's Progress*, unintentionally summarized the totality of global health ventures, from the past to well into our future, when he wrote: "*You have not lived today until you have done something for someone who can never repay you*." This should be the guiding ethical principle for each individual participating in any global health endeavor.

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