



Global Health Professionals: Education and Training

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Abstract

Global health education is a growing academic field both in terms of the number of students seeking training in the field and the number of institutions offering formal degree and certificate programs. Training and education opportunities are available for people at all career stages, including those who wish to add a global health perspective to their primary professional training. Interdisciplinary by nature and design, global health training requires mastery of core content and competencies which can best be acquired through a combination of interactive classroom work and field-based experiential learning. Several pathways exist for acquiring global health expertise including those grounded in the social sciences, public health, and medicine. Training ranges from formal degree programs and postgraduate fellowships to short-term certificate courses and on-the-job knowledge and skills transfer. This chapter provides a brief history of training in global health, followed by a broad review of the types of educational and training opportunities to which students have access. This chapter also presents the availability and value of training for people in high-income and low- and middle-income countries.

Keywords

Global health education · Health workforce · Training · Practice

Introduction

When global health emerged as a new academic field 20 years ago, none of us could have predicted how it would become firmly established as its own multidisciplinary specialty present in many undergraduate, graduate, and postgraduate training programs. Since it was first described in 1999 by colleagues at the University of California in San Francisco, it has grown by all conceivable metrics. Consider the following selected measurements:

Institutional engagement

- Between 2001 and 2011, the Consortium of Universities for Global Health (CUGH) reported that the number of US academic institutions with global health partnerships increased more than ten-fold, from 6 to 78 (Merson 2014).
- CUGH membership has grown from 24 institutions at its inaugural meeting in 2008 to 197 institutional members in 2020 (CUGH 2020).

Academic programming

- Among 186 liberal arts colleges surveyed in 2016–2017, almost half (43%) offer a public health/global health major, minor, concentration, or independent study while nearly all (90%) offer at least one course in public health/global health (Robinson et al. 2018).

- The percentage of graduating residents reporting on the national American Academy of Pediatrics survey that their program offered global health training grew from 59.1% in 2008 to 73.1% in 2016 (Pak-Gorstein et al. 2019).

Funding levels

- Total US global health funding doubled from \$5.4 billion in FY 2006 to \$11 billion in FY 2019 (Kaiser Family Foundation 2019).

Over the last two decades, centers, institutes, and programs in global health have been established across colleges, universities, and academic medical centers to keep pace with the high demand for global health training from students and trainees at all levels, representing an increasingly wide range of disciplines. Training modalities have also multiplied to encompass both classroom learning including didactics and interactive case studies and experiential learning opportunities (often referred to as “field experiences”), leading to global health majors, minors, certificates, and other credentials. This chapter provides an overview of the current landscape of global health educational and training opportunities available to global health professionals.

Global health learners and practitioners know that context matters. This is true for understanding the history and trajectory of global health education and training programs as well. Academic global health, derived from the earlier fields of tropical medicine and international health, emerged as an academic discipline firmly rooted in social justice and health equity. Consequently, global health shifted the work of public health and healthcare delivery across borders from the sphere of charity and volunteer work that often, intentionally or unintentionally, mirrored prior colonial relationships, into an academic discipline with established competencies and learning objectives that uses the academic tools of research, education, and practice to promote health and well-being worldwide through equitable partnerships (Wernli et al. 2016; Adams et al. 2016; Steeb et al. 2019).

Still, most global health educational programs today are based at institutions in high-income countries (HICs) with the main aim of preparing their students and trainees to build capacity, deliver care, develop health programs, and/or conduct research in low- and middle-income countries (LMICs). Welcome shifts in the growing number of programs hosted at LMIC institutions are discussed in the section on future vision for global health education and training. In this chapter, every effort is made to highlight programs in both HICs and LMICs.

Current Landscape of Global Health Education

The current landscape of global health education and training programs is vast and varied. Programs exist for learners as young as those in their teen years and extend to those approaching or well into their retirement years. Program length, depth, and content also cover a wide spectrum. While advanced training in public health and medicine had been the traditional focus, academic institutions now provide a wealth

of interdisciplinary offerings in health systems, quality improvement, and healthcare delivery science. Furthermore, in response to increasing chronic disease rates, emerging infections, environmental hazards, humanitarian crisis, and our reliance on shared food and economic systems, global health has transnational and national importance in sustaining healthy individuals and communities.

Undergraduate Schools

An increasing number of undergraduate programs are offering global health majors or minors as well as certificate programs and other forms of recognition. A recent review of the curricular offerings of 411 top ranked colleges and universities in the USA in 2019 found that 35% offer a general public health, community health, or global health major and/or minor; this number jumps to 55% when various sub-disciplines and other population health-related programs are included (Waggett and Jacobsen 2020). With their breadth of courses across the sciences, social sciences, and humanities, liberal arts colleges are especially well positioned to provide a comprehensive study of global health. Many colleges boast both strict disciplinary and interdisciplinary courses that tackle current challenges in global health and healthcare systems, history of health and healthcare, health policy, emerging pathogens, globalization, cultural studies, and the social determinants of health. While anthropology and sociology departments are the most common academic homes for such courses, departments as disparate as geography, economics, engineering, and comparative literature may also offer courses relevant to an early global health learner who wishes to explore lightly or dive deeply into the discipline.

Schools of Public Health

Global health curricula grew out of public health training and schools of public health provided the early “homes” for global health departments and programs. According to the Association of Schools and Programs in Public Health, there are currently 50 accredited institutions in the USA offering global health training in some capacity (Association of Schools and Programs of Public Health 2020). This may span the range from coursework, certificate programs, tracks, content area concentrations, or specializations, to practicums and thesis field work. In recognition of the important role that today’s globalization plays in health, some schools are adding introductory courses in global health to their roster of required classes for the degree. The most common public health degree is the masters, but doctoral degree programs are also granted by most schools of public health.

Medical, Nursing, Pharmacy, and Allied Health Schools

Medical and nursing schools across the USA have responded to increasing student demand for options to study and practice global health and conduct global health

research. Many schools now offer electives on various global health topics and even more address global health aspects of disease in the infectious disease or child and maternal health components of their core curriculum. Several schools also offer global health tracks, certificates, classroom-based and field-based electives or internships in community health or research. Many schools also support student-run interest groups to allow a speaker series or other informal opportunities to interact with local and regional global health experts.

Global health training is also of interest to students in pharmacy and allied health professions such as physical therapy. In response, some schools are developing overseas training opportunities in the form of advanced practical experiences in LMICs and graduate certificate programs. Students of physical therapy and other rehabilitation services are a newer cohort to join global health training; however, the importance of their role is clear. Given the growing number of individuals living with disabilities globally, the disproportionate number of these individuals who live in LMICs, and the limited access to specialized rehabilitation services in most LMICs (WHO and World Bank 2011), students of physical therapy, and other rehabilitation services can serve an important role in supporting the development of disability care in LMICs.

While demand for global health training by health professions students is rising across high-income nations, students often find little orientation or preparation in pursuing international opportunities; this is particularly well documented among medical students (Bozorgmehr et al. 2010; Johnson et al. 2012). Standards for predeparture preparation are being established at many institutions and it is no longer acceptable to simply send students (or faculty) into a global health field experience unprepared (Adams and Sosin 2016). Similar aspirations exist among health professions students in LMICs but opportunities to train in a cross-cultural setting are limited and expectations may be different.

Postgraduate Training

Similar exponential growth has occurred in postgraduate training programs across a wide range of specialties. Global health curricula, residency tracks, and specialized fellowships now exist to meet the training needs of those pursuing careers in a variety of specialties including anesthesiology (Kaur et al. 2017; Abou El Ela Bourquin et al. 2018), emergency medicine (Hau et al. 2017), family medicine (Hau et al. 2017), neurology (Deb et al. 2018), oral health (Lambert et al. 2020), oncology (Balogun et al. 2019), obstetrics and gynecology (Trivedi et al. 2018), pediatrics (St Clair et al. 2020; Crouse et al. 2020), pathology (Glynn et al. 2020), and surgery (Abou El Ela Bourquin et al. 2018). While the rigor, time constraints, and Graduate Medical Education requirements can limit a postgraduate's ability to pursue global health training in the field for more than a month at a time, many programs aim to incorporate their trainees into existing research, capacity building, or care delivery collaborations so that preparation can begin well before the trainee departs their home institution. Follow-up work can also continue more easily once the trainee returns when their work is part of a longitudinal project and a valued, ongoing partnership.

Global health training is particularly common within certain specialties. A survey of 198 pediatric residency training programs in the USA found that one-fourth of the programs had a global health training track, with over half offering international field experiences in 153 countries, a truly global effort (Butteris et al. 2015). Two-thirds of the programs had a global health faculty lead. Larger programs were able to provide more pretravel preparation, including orientation and cultural competence training, and international research opportunities. International training opportunities can help to fulfill core training competencies in community medicine, health equity, and public health, skills that residency programs aspire to impart (Bazemore et al. 2007). Similar training opportunities are being developed in other high-income countries such as residency training in Canadian family medicine programs with a focus on developing curricula for training abroad (Redwood-Campbell et al. 2011). In Australia, there is greater recognition of the value of integrating global health training in clinical and postgraduate training as a core content area (Mitchell et al. 2013). Most program developers are utilizing international curricula, resident and faculty surveys, and published literature to develop residency curricula that offer global health electives and training. However, gaps in curricula persist and are generally proceeding on an institution-by-institution basis, although there are increasing publications documenting experiences and sharing content and lessons learned.

Faculty Development/Training

Faculty at all levels – junior, mid-career, senior, and post-retirement – are seeking opportunities for global health engagement. Those at either end of their career spectrum may find that they have the time as they are less hindered by economic or family commitments, while others are eager to return to prior international work they may have done as a Peace Corps volunteer or on an earlier service trip or medical student elective. Many are also drawn by what they see as a chance to focus on practice of medicine in a system (at least seemingly) less complicated by third party billing paperwork and other burdensome administrative tasks. Finally, the opportunity to have a greater impact on individual patient lives in settings where formally trained specialists may not exist is a compelling ethical draw for many established experts.

While there are many entry points for students interested in global health, there are fewer options for faculty to receive such training, especially if they are unable to return to fulltime or even part-time study, such as a master's degree program. Many will instead choose to find a nongovernmental organization that they can volunteer with or may engage through an established partnership with colleagues at their institution or academic medical center. In those cases, the organization or colleagues may take on the responsibility for providing the necessary training and preparation. There are few formal programs (and none described in the literature) for this growing cohort of global health enthusiasts. This is a notable gap in the global health education and training landscape and it is recommended that global health program

directors ensure that their established faculty – who may be among the most accomplished in their respective fields – have appropriate faculty development seminars and training sessions to ensure they will be most effective during their global health engagements.

Competencies in Global Health Practice

Competencies were established for the health professions to ensure their graduates have the required knowledge base and skillset to practice safely and effectively. Furthermore, they ensure a minimum standard is attained and, in some cases, maintained over time through repeated re-assessment (e.g., recertification exams for physicians and advanced practice nurses). When coupled with standards of best practice, competencies can also promote ethical practices in global health, a critical topic which is discussed later in this chapter.

As global health emerged from its early roots of mostly part-time practice through voluntary service and by unregulated, albeit often well-intentioned, individuals, to become an established academic discipline, it became clear that competencies were needed. Discussions about this dire need began at the inaugural CUGH meeting in 2008 and by 2013, CUGH had appointed a multidisciplinary Global Health Competency Subcommittee to address this critical gap. This committee was specifically charged with defining the core competencies in global health that could apply across specialties and disciplines of practice. The result of their intensive two-year work was a published list of 52 interprofessional global health competencies (Jogerst et al. 2015). Their seminal work defines degrees of proficiency organized as competencies for two levels, a Global Citizen Level (13 competencies across 8 domains) and a Basic Operational Program-Oriented Level (39 competencies across 11 domains). These domains extend beyond the obvious areas such as global burden of disease, globalization of health and health care, ethics, professional practice, and project management to include health equity and social justice, and sociocultural and political awareness. For a sample of competencies and domains, see Table 1. At the time this list was published, the authors advised that further work be done to validate and continually refine these competencies to keep them relevant to the evolving field of global health practice. Since their publication, the Global Health Competency Subcommittee has subsequently created an accompanying toolkit, which, updated in 2017, includes teaching strategies, and accompanying educational resources (articles, websites, books, annotated bibliographies, and study questions) for each competency (CUGH Competency Sub-Committee 2018).

While the CUGH-produced competencies are among the most commonly adopted, other leading specialty agencies have also developed their own competencies. For example, the Association of Schools and Programs of Public Health developed six global health competencies that build on the 12 foundational knowledge areas and the 22 MPH foundational competencies required for all CEPH-accredited programs (Jacobsen et al. 2019). At a workshop convened in 2014, 30 representatives from the 50-member Association of Pacific Rim Universities Global

Table 1 List of competencies categorized into 8 domains for global citizen and 11 domains basic operational program-oriented levels

Domains and competencies
<p>DOMAIN: 1. Global burden of disease</p> <p>Encompasses basic understandings of major causes of morbidity and mortality and their variations between high-, middle-, and low-income regions, and with major public health efforts to reduce health disparities globally.</p>
<p>DOMAIN: 2. Globalization of health and health care</p> <p>Focuses on understanding how globalization affects health, health systems, and the delivery of health care.</p>
<p>DOMAIN: 3. Social and environmental determinants of health</p> <p>Focuses on an understanding that social, economic, and environmental factors are important determinants of health, and that health is more than the absence of disease.</p>
<p>DOMAIN: 4. Capacity strengthening</p> <p>“Capacity strengthening is sharing knowledge, skills, and resources for enhancing global public health programs, infrastructure, and workforce to address current and future global public health needs.”</p>
<p>DOMAIN: 5. Collaboration, partnering, and communication</p> <p>“Collaborating and partnering is the ability to select, recruit, and work with a diverse range of global health stakeholders to advance research, policy, and practice goals, and to foster open dialogue and effective communication” with partners and within a team.</p>
<p>DOMAIN: 6. Ethics</p> <p>Encompasses the application of basic principles of ethics to global health issues and settings.</p>
<p>DOMAIN: 7. Professional practice</p> <p>Refers to activities related to the specific profession or discipline of the global health practitioner. (Domain definition proposed by members of the CUGH Global Health competency subcommittee.)</p>
<p>DOMAIN: 8. Health equity and social justice</p> <p>“Health equity and social justice is the framework for analyzing strategies to address health disparities across socially, demographically, or geographically defined populations.”</p>
<p>DOMAIN: 9. Program management</p> <p>“Program management is ability to design, implement, and evaluate global health programs to maximize contributions to effective policy, enhanced practice, and improved and sustainable health outcomes.”</p>
<p>DOMAIN: 10. Sociocultural and political awareness</p> <p>“Sociocultural and political awareness is the conceptual basis with which to work effectively within diverse cultural settings and across local, regional, national, and international political landscapes.”</p>
<p>DOMAIN: 11. Strategic analysis.</p> <p>“Strategic analysis is the ability to use systems thinking to analyze a diverse range of complex and interrelated factors shaping health trends to formulate programs at the local, national, and international levels.”</p>
<p>Excerpted from Jogerst et al. (2015)</p>

Health Program drafted 19 core competencies across five domains for masters-level global health training (Withers et al. 2019). These domains spanned from the more traditional public health areas of determinants of global disease patterns and project

management to include broader issues of globalization such as global health governance and diplomacy and included the critical issues of global health ethics and human rights. Their document also provided guidance on optimal methods to educate students to attain these competencies through a combination of in-class learning, practicums, collaborative research engagement, and strong mentoring.

Academic Training Modalities Leading to Credentials

Academic credentials are critical to establishing standards of practice and competency in a field. As discussed above, global health educational opportunities exist at every stage of training; however, some are offered through informal programs while others will lead to a formal accredited degree or credential. The following section outlines the standard degree programs and also discusses common nondegree-granting options that global health learners may seek to fill specific gaps in their knowledge or skillset. (Note: Specific programs and institutions are mentioned for illustrative purposes only and do not imply a particular endorsement.)

Undergraduate Degrees

The interdisciplinary nature of global health education is well-suited for undergraduate dual degrees, either as a minor or major with formal training in key concepts, tools, challenges, and solutions. Traditionally, nonmedical fields such as business administration and engineering also offer global health training, recognizing the value of problem-based learning for solving some of the most vexing health issues of our lifetime. For example, undergraduates at the University of Washington in Seattle can major in global health through the school of public health – a program that was refocused to accommodate growing student interest in local and global aspects of health science with options for new course sequences (UW School of Public Health 2018). However, undergraduate majors in global health are still evolving and may differ vastly in terms of content and approach across institutions – something that will need to be addressed in order to align curricular content with standardized competencies. The Council for Education for Public Health (CEPH) has published accreditation criteria for standalone baccalaureate programs in public health but does not include any specific competencies for global health. Academic requirements for an undergraduate degree can vary with respect to final theses, practicums, and international training opportunities (Drain et al. 2017). There are currently no standards for which departments can host a global health degree program for undergraduates, thus adding to the variation in course content and approach. Delivering international training to undergraduate students, while incredibly formative, can also increase the resource burden for home and host institutions, with increased demands for supervision and wellbeing abroad. Additionally, training students from high-income countries in low-income settings raises questions of privilege and reciprocity which must be acknowledged and addressed.

Graduate Degrees

Graduate public health education has included training through masters programs in public health (MPH) and science (MHS or MSc), doctorates in philosophy (PhD) in the social sciences, and professional public health degrees such as a DrPH. Medical schools also offer public health courses and joint MD-MPH programs for integrated training in medicine and public health (Koo and Lapp 2014; AAMC 2020). Advanced global health education is integrated into these formal tracks with core coursework in epidemiology, biostatistics, health policy and management, health financing, social determinants of health, and other theoretical and practical foundations for public health science. Students can target their degrees toward global health by choosing pressing global health issues for thesis or dissertation research, engaging in practicum training under faculty with well-established global health research portfolios, and through interdisciplinary coursework focused on global health challenges and response.

For evident reasons, global health education builds on formal public health content given the foundational work in public health research and programming. But there is sufficient need for training that is particular to the morbidity and mortality burden in LMICs, especially when combined with the challenges faced by poorly resourced health systems. Furthermore, any additional shocks in the way of natural disasters, humanitarian crisis, and poorly enforced social and human rights protections also need to be addressed with regard to their impact on health outcomes. Considering the disproportionate adversity faced by many citizens of the global south, graduate training is tailored to address the specific needs of these countries and communities. Within countries, additional effort is required to protect vulnerable people who are at risk of higher disease incidence without much relief from the health system. An example is the global fight against HIV/AIDS where coordinated global funding, advocacy, and scientific investments curtailed the pandemic across the world but where pockets of vulnerability still exist among disenfranchised and neglected populations. Many opportunities exist for graduate training in areas such as infectious disease epidemiology; maternal, newborn, and child health; adolescent health; primary care; health system strengthening; and data science that can deliver training in evidence-based practices for global impact.

Students around the globe are eager for experiences outside of their country to help develop their skills as a practitioner. However, students may differ in their interpretations of their experiences. In a survey of US medical students rotating through partner sites in LMICs and vice versa, trainees agreed on the value of experiencing different healthcare systems, resource settings, and cultures but diverged on the educational experiences, with US students pointing to the value of focusing on social determinants of health and LMIC students highlighting the contribution to their career goals (Peluso et al. 2018). These differences in the goals of global health education are important in considering any programs that incorporate reciprocity – but also highlight the value of global health education in uncovering stark inequalities that may be masked in the USA by providing opportunities to students who may not fully appreciate the impact of poverty on health

inequities. Similarly, a reciprocal training program can offer career advancement for LMIC students that may be lacking in their home institutions.

Certificate/Track Programs

Global health certificate programs can provide focused introduction to global health issues and skills. Often combined with complementary programs or offered independently to established professionals, these certificate programs provide an overview of the practical knowledge and skills in global health science. The education objectives can be targeted to professionals who want a global health focus in their professional work or those wanting to explore the discipline without enrolling in a formal degree program. Certificate programs are shorter than masters training and may be run by nonaccredited institutions. They can be easily customized to specific issues such as the portfolio at Unite for Sight which offers a number of online certificates in global health including cultural competency, global health practice, social entrepreneurship, research, monitoring and evaluation, technology, health education, NGO management, program development, public health management, maternal and child health, refugee health, urban health, community development, social marketing and entrepreneurship, community eye health, environmental health, nutrition, surgery, and program delivery (Unite for Sight 2020). Similarly, Johns Hopkins Bloomberg School of Public Health confers online certificates to students enrolled in other degree programs as well as external candidates (Johns Hopkins Bloomberg School of Public Health 2020). Many schools of public health in the USA have this option – and can be researched online. Similarly, universities in Europe, South Africa, Asia, and Canada train a number of candidates in distance learning programs of almost any size and shape (WHO 2020). Certificate programs can quickly develop participants' capacity to design, implement, support, and evaluate global health delivery programs.

Postgraduate Training

While training opportunities are proliferating and providing important experience and skills, there are still gaps such as the preparation of residents prior to international trips. Beyond vaccinations and safety guidelines, trainees are in need of preparatory coursework in tropical medicine, cultural competency specific to the country and setting of travel, guidelines on working in low-resource settings, and ongoing assistance for ethical and mental health issues arising from the challenges that are inherent in global health service delivery. A multisite study of residency practice locations showed that many residents end up working in rural areas of dense poverty, a location which may add extra challenges with regard to context, communication, and resources in addition to the limitations posed by poor health systems (Liaw et al. 2014). International clinical training can demand skills that may not be commonly practiced by residents in the US context such as cesarean sections or

minor surgeries. Being mindful of cost-effectiveness of interventions, valuing cultural competence and providing care to extremely underserved populations are part and parcel of international placements (Lu et al. 2018). However, having stable, academic partners who can provide clinical supervision is essential to avoid residents taking on unsupervised clinical duties that are outside their expertise or knowledge and skills or that exert extraordinary demands on partner institutions (Arora et al. 2017). Accreditation of clinical training curricula would be an important effort to address many of these concerns as they would clarify the importance of preparatory training, establish substantial supervision capacity at host institutions, and delineate the clinical roles of trainees. It is important that funding accompanies all training efforts, both for sending and receiving institutions. Additionally, reciprocity in training for physicians from LMICs in high-income settings can be equally relevant and important toward addressing global health training inequity – something that needs to be part of any consideration for global health education (Adams et al. 2016).

On a country by country basis, through innovative collaborations between universities and research institutes, opportunities are available to build competency in research as well. The George Institute for Global Health in Australia has a postgraduate and visiting fellows training program to recruit, train, and retain researchers from around the world who are committed to tackling global health disparities through high quality research efforts (The George Institute for Global Health 2020). The American Academy of Family Physicians endorses several clinical fellowship programs at US colleges and universities aimed at a host of trained clinicians who wish to expand their global health knowledge and skills through a combination of classroom and applied opportunities in domestic and international settings (AAFP 2020). Several clinical fellowships in global health from US academic centers are listed in the Global Health Fellowship database (Global Health Fellowships 2020). Nonclinical fellowships for nurses, economists, engineers, and post-Bachelor students to gain experience in global health, often offering field experience in a developing country, can be found at ProFellow (ProFellow 2018). Hundreds more global health, policy, and diplomacy training opportunities exist for professionals across the world – best found through a combination of web searches and listserv postings.

Unique fellowship programs have been established worldwide to build interdisciplinary, applied skills for professionals from a wide range of fields to achieve greater global health equity and address planetary challenges. The Acumen Fellowship program is one such pipeline – recruiting professionals from Malaysia, Bangladesh, Colombia, India, and East and West African countries to learn about systems change in their home countries (Acumen 2020). Designed to build leadership skills, professionals can address prominent global health challenges through existing or new programs. Fellows have worked on solution driven projects in areas such as telehealth, health insurance financing, youth violence and drug use, housing, and primary health care. The Humphrey Fellowship Program, funded by the US Department of State and administered by the Institute of International Education, matches young and mid-career professionals from designated countries with US

counterparts for a year of nondegree graduate-level study, leadership development, and professional collaboration (The Hubert H. Humphrey Fellowship Program 2020). In public health, fellows can focus on infectious diseases; health policy and management; HIV/AIDS policy and prevention; and substance abuse prevention, education, and treatment. The Institute for Health Metrics and Evaluation (IHME) has a fellowship program for candidates with a doctoral research degree or equivalent in demography, economics, sociology, health policy, or a related social science field and an active academic appointment at another institution. Fellows investigate the trends and determinants of healthy aging at the international and subnational levels through methods development and estimation efforts with IHME researchers, especially the Global Burden of disease study. The PHI/CDC Global Health Fellows Program in the USA offers recent CEPH-accredited graduates opportunities to engage in six technical areas for a year of global health training (PHI/CDC Global Health Fellowship Program 2020). Technical areas include HIV/AIDS prevention, program management, epidemiology, strategic information, monitoring and evaluation, and surveillance. However, fellowships are only offered to US citizens or permanent residents.

Nonacademic Training Modalities

Nonaccredited Courses or Training Modules

Nonaccredited or partial-credit courses are offered by several public health institutions. For example the US Centers for Disease Control and Prevention's (CDC) Field Epidemiology Training Program (FETP) modules invest in building a global health workforce that can quickly respond to disease outbreaks before they become epidemics (CDC 2020). FETP graduates learn to quickly communicate health information about infectious and noncommunicable diseases and environmental hazards that can threaten the wellbeing of communities and have the potential to become widespread catastrophes. Over 80 countries have benefitted from these programs. Some of the most recent responses have included Ebola in West Africa, Zika in the Americas, MERS-Cov, Polio, and the Covid-19 pandemic.

The training programs in epidemiology and public health interventions network (TEPHINET) operate as professional membership networks to train and respond to public health emergencies in 100 countries (TEPHINET 2020). Programs are offered in field epidemiology and laboratory and/or veterinary science and accredited by a global body to ensure standardization and quality. Training programs are designed to create an epidemiology service at the level of the national government to ensure that public health officials are able to identify threats to the health and wellbeing of the country's population and respond with accurate and appropriate tools and materials. For example, TEPHINET disburses mini-grants to indigenous researchers who serve as principal investigators who analyze existing surveillance data on the country's noncommunicable diseases.

Short courses are also offered by international organizations in a number of modalities from online learning to self-directed training modules such as LAICO-Aravind Eye Care System in India which provides training in hospital administration and systems development for Indian and foreign practitioners. Similar, multitopic short courses are also given by AMREF-Nigeria and the Institute of Health Management Research – India, among others (WHO 2020). Courses in LMICs are low-cost, designed to be affordable for people in the country – while courses at European institutions are priced higher, albeit sometimes with financial scholarships for those who cannot afford them. The Global Health Training Centre in Singapore offers free of charge online courses and seminars to teach research methods (Global Health Training Centre 2020). It is endorsed by several bilateral and multilateral donors and stakeholders.

On the Job Training

For all health professionals, continuous learning is necessary to stay current in one's field. Both formal and informal mentoring ensure that professional growth persists. For health professionals in LMICs, on the job training in clinical practices has been expanded through joint collaborations, especially with the USA through programs such as the Global Health Service Partnership and the Rwandan Human Resources for Health Program (see Text Box 1). These two collaborations are funded primarily by the President's Emergency Plan for AIDS Relief (PEPFAR) to strengthen medical and nursing education. Nurses, physicians, researchers, health managers, and other healthcare professionals are trained in twinning programs and on-site short and long-term trainings to improve the quality of medical and nursing education and care delivery in places with a high burden of disease and a dire shortage of health professionals.

Text Box 1: Human Resources for Health in Rwanda (HRH-Rwanda)

One of the most ambitious global health training programs was launched in Rwanda in 2012 as a multi-sectoral collaboration between the Government of Rwanda and US academic institutions to train a large, diverse, and competent health workforce in the country. The program sought to upgrade the health workforce beyond the physicians and nurses with low levels of generalized training and very limited specialist access available only in Kigali, the capital.

Funded primarily by the US government, the HRH Program sent over 100 US medical personnel to Rwanda for short and long-term placements at health facilities across the country to provide training in clinical care, healthcare management, research, education, and capacity building. The Program also strengthened the capacity of Rwandan academic centers to sustain future training by increasing the numbers and competencies of Rwandan medical

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faculty, strengthening health systems management capacity; and establishing bilateral academic partnerships. To support ownership, planning, and sustainability, the funding for the program flowed directly to the Government of Rwanda who utilized 60% of the funds to cover costs of the visiting faculty and the remaining funds to improve management, equipment, and supplies at the training sites. Thus, the Rwandan government was given an unprecedented role in global health planning and financing, to set priorities for the training needs of its workforce to address the country's persistent and emerging health threats.

Twenty-two training programs, 12 of which were new, were established across four disciplines including medicine, nursing and midwifery, oral health, and health management and implementation. Through 2019, over 4500 students were expected to graduate from baccalaureate and Masters level training programs. Rwandan faculty were engaged through a "twinning" model to develop the careers and skills of Rwandan specialist clinicians and educators to assume all teaching and care delivery after the initial seven years of implementation. The impact of the HRH Program in Rwanda, combined with additional economic investments and development initiatives are credited for the Rwandan government's successful response to the Covid-19 pandemic, showing that intersectoral investments in health can have a long-term impact.

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Evaluation of Global Health Training

Evaluation in global health educational and training programs is used to assess the acquired knowledge and skills of the students or trainees (and whether levels of competence have been attained across all required domains) as well as to assess value and effectiveness of the educational or training program itself. Standard means of student evaluation (e.g., written exams/quizzes, analytic papers, and research reports) are still the norm but many global health educators recognize the importance of effective communication, advocacy, ethical practices, and teamwork in global health practice. Consequently, oral presentations, written reflections, classroom debates of controversies in global health, and team-based projects are becoming commonplace mechanisms for assessing both engagement and mastery of competencies in global health courses. Evaluation of applied skills is also an important

aspect of assessing global health professionals. In the classroom, dissection of case studies can be used for this purpose. In the field, reports which go beyond factual summaries to include self-assessment and reflection by the learner as well as feedback from supervisors or colleagues on the ground can be very useful to capture a comprehensive picture of both professional and personal growth. Progress towards achieving the established competencies described above should be monitored and shared with the learner regularly to ensure they are on track for attaining the required knowledge and skills during their program.

One set of assessment tools that institutions may find useful is the 16 open access VALUE rubrics produced by the Association of American Colleges and Universities (AAC&U 2007). Developed by US faculty experts and other educational professionals through an iterative peer-review process, these rubrics can be used by educational institutions to assess and guide student learning through a progression of higher levels of mastery including the application and synthesis of new knowledge. Several of the VALUE rubrics are relevant to global health learners, in particular the Global Learning rubric with its assessment areas of global self-awareness, perspective taking, cultural diversity, and understanding global systems.

Assessments of training programs typically rely on student feedback provided at the end of the program or occasionally at some regular interval (e.g., annually). To ensure that global health educational programs are comprehensive, established competencies can be mapped onto program curricula and any gaps addressed through targeted planning such as outreach to specific guest speakers or additional field opportunities. Global health educational programs based on partnerships in LMICs can also be evaluated by application of existing guidance documents such as the Fair Trade Learning rubric (Hartman 2015). This tool is designed to guide global partners through early stakeholder assumptions and indicators of engagement toward an aspirational ideal relationship based on equity and a balance of power across the partnership. Such tools that assess partnerships and academic collaborations are utilized too infrequently.

Another means of assessing global health programs is by measuring impact. Impact on students and trainees can be measured as either immediate impact (e.g., captured in narratives during or shortly after a global health experiential practicum) or as longer-term impact (e.g., by following the career choices and professional activities graduates engage in). Many global health training programs have numerous testimonials – formally and informally documented – on the immediate impact that global health education has on its students. Global health training often takes students out of their “comfort zone” and into unfamiliar settings, both literally and figuratively. Van Schalkwyk and colleagues have described transformative learning as “learning that challenges established perspectives, leading to new ways of being in the world” (Van Schalkwyk et al. 2019). Global health education provides many transformative learning opportunities and educators and directors of global health education programs should ensure that they have mechanisms in their programs to promote and support such growth and learning; without appropriate support, students can feel adrift and/or overwhelmed. The impact of specific global health training on learners has been most well studied in medical students and residents.

In Germany, students who pursued electives abroad during their practical year (283 of 554 surveyed) achieved higher scores on their medical licensing exam (Störmann and Angstwurm 2018). Other studies (albeit with small study samples) examining long-term effects have shown that completing a global health elective during an OB/GYN residency was associated with a career working in global health and/or local health disparities (Patel et al. 2019). Similarly, faculty from a dedicated global health residency program found that of a majority of their graduates were able to continue to engage in global health activities after graduation despite challenges of lower salaries, a lack of mentors, and under-supported career pathways at their institutions (Palazuelos et al. 2018). Such findings suggest that global health training can contribute to long lasting impacts on career trajectories.

The other critical area for evaluation is the impact on the communities, institutions, and partners where global health learning and collaborative programs occur. Again, there are many personal anecdotes and nonpublished reports that highlight successful educational programs but almost none in the published literature. This is a gap in documentation of the value of global health education and, without host partner feedback, risks the educational activities and benefits being one-sided. One study that used semi-structured interviews with host partners in Bolivia and India found that they experienced several benefits including improvements in job satisfaction, local prestige, global connectedness, leadership skills, resources, and a sense of efficacy within their communities (Kung et al. 2016). Another study that interviewed medical colleagues in Benin that hosted Canadian medical students found some similar benefits including additional motivation for self-learning and improved patient care (Renaud-Roy et al. 2020). However, both studies noted a desire on the part of the hosts for greater parity in the opportunities provided to their students such as an opportunity for local medical students or professionals to take part in such international electives. This should be a priority area for global health educational programs moving forward.

Standards of Practice in Global Health

Universally vetted standards of practice for global health education are lacking. This gap has been well documented and described as the broad lack of a standard curriculum across all of the health professions (Mendes et al. 2020) or the specific absence of learning domains and competencies for nursing practicums (Kelly and Lazenby 2019). The risks associated with not having standards of practice in global health education may seem obvious: the students' education can be compromised and learning objectives/competencies are not mastered, inconsistent or variable quality of global health education programs that may waste resources and expertise, and because of the direct relationship to host partners, communities, and sometimes patients, the possibility of doing more harm than good. This latter concern, often housed in the broader realm of ethical practices in global health, has, appropriately so, garnered significant attention by ethicists and practitioners alike. This attention has resulted in the development of an oft-cited framework for short-term global

health experiences (Shah et al. 2019) and guidance for institutions, trainees, and sponsors of field-based global health training developed by the Working Group on Ethics Guidelines for Global Health Training (Crump et al. 2010). Comprehensive standards of practice would go beyond purely ethical considerations to include a consensus on the essential curricular elements and learning formats necessary to achieve the core competencies for one's respective field of global health practice. Some of this work is being done piecemeal by some programs but the field as a whole would benefit from a universal set of standards developed by an international and multidisciplinary expert panel.

Critical to the future of global health education is an overdue shift towards equitable access. As noted at the beginning of the chapter, most global health educational programs are housed at academic institutions and medical centers in high-income countries. Most programs are unilateral, sending learners to LMICs but rarely receiving learners from LMICs in the same numbers. The need to correct this imbalance in programming and to further "decolonize" global health education and practice by developing more equitable partnerships is being brought to the fore with early efforts to challenge the status quo well underway (Martin et al. 2019; Eichbaum et al. 2020).

The disparities in global health education will be further disrupted as programs are launched at (and fully owned by) academic institutions in LMICS. One prime example is the University of Global Health Equity in Rwanda which is the first academic institution dedicated solely to training in equitable, quality healthcare delivery from a global health perspective (UGHE 2020).

Reports in the literature indicate that global health programs are being established in other LMICS including the development of the first global health bachelor curriculum in Wuhan, China (Guan et al. 2019), and numerous global health certificate and online courses being offered in India (Pati et al. 2017). Mentoring – essential to the professional growth of students in every health profession – has been noted as an area needing further cultivation in many LMICs. Prasad and colleagues propose two conceptual frameworks to foster mentoring in LMICs, while emphasizing the importance of creating enabling environments within institutions (Prasad et al. 2019). Just as global health education has been a growth industry in the USA, Canada, and Europe, LMICs are likely to be the next settings for these programs to expand.

Conclusion

Since global health emerged as a new academic field twenty years ago, it has grown by every conceivable measure. Its growth is evident in the rising number of students seeking training in the field and the increasing number of institutions offering formal degree and certificate programs, both degree bearing and nondegree bearing. A myriad of training options exists for learners at all levels and across all the health professions – medicine, nursing, oral health, public health, pharmacy, and rehabilitative care. Beyond the undergraduate and graduate levels, training options span

from formal degree programs and postgraduate fellowships to short-term certificate courses and on the job knowledge and skills transfer for faculty and established practitioners. Mastery of global health knowledge and skills is best acquired through a combination of interactive classroom work and field-based experiential learning. Interdisciplinary core competencies have been developed and several evaluation tools are available to assist educators in assessing their students and their programs. Efforts to create a standard curriculum and standards of practice are underway, the latter being essential to ensure ethical practices are maintained. A movement to promote equitable access to global health education by decolonizing global health partnerships and practices is shifting us towards a more balanced approach. Global health training programs based in LMICs are on the rise and will further this goal of equity in education.

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