PERSPECTIVES

Building a successful Global Health curriculum: advice from a fellow trainee

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Global health is an interprofessional collaboration to improve population health and individual clinical care worldwide. As interest in global health increases and educational programs respond to this growing interest, there is a need to re-evaluate the strength of rapidly growing global health training programs. As many other education systems move to competency-based training, so too should global health. Competency-based training focuses on the ability to perform a task, understand a concept or approach a problem with the appropriate attitude successfully.[1–3] Much of the old model of global health education is content-based and emphasizes number of training hours completed. The Association of Schools and Programs of Public Health (ASPPH), the leaders of the competency-based educational effort, believes that global health education should be outcome-oriented.[1] Outcome-based global health education will ensure that trainees are better equipped with the knowledge, skills and attitudes needed to enter the global health arena. Goals of global health programs should include competency-based curricula implementation and an emphasis on core competencies that span all disciplines related to global health. Developing these cross-disciplinary global health competencies has been an ongoing project of the Consortium of Universities for Global Health's (CUGH) Global Health Competency Subcommittee for the past year. The Subcommittee members have collaborated and developed core competencies for two trainee levels of global health involvement. From this experience of competency development comes the inspiration for a trainee-led movement for the successful implementation of these competency sets. Trainee-driven global health curricula will encourage programs to shift their standards from hours invested to skills, knowledge and attitudes acquired. If done across all global health disciplines, this will ensure that all professions have the competencies needed to work together on achieving the collective goals of global health.

The Collective Goals of Global Health Programs

The global health literature contains many definitions for the term "global health." Some consider it the most recent version of similar terms: international health and tropical medicine.[2] This view sees the renaming with a new term "global health" as a way to mask a lack of change. Renaming international health or tropical medicine programs to "global health programs" masks the fact that developed countries continue to apply wasteful, Western methods in addressing the public health problems of developing nations. Others find the new term represents true change by emphasizing collaboration between the Global North and the Global South As explained by Ouma and Dimaras in their debate article on global health program partnerships, the terms/concepts of "Global North" and "Global South" do not refer to a geographical dichotomy, but a broader "socio-economic divide" that exists both between and within countries.[25] As Dr. Peter Piot, Director of the London School of Hygiene and Tropical Medicine, said during his presentation at the 2014 Consortium of Universities for Global Health (CUGH) conference, this reframing of global health provides an opportunity for novel approaches to public health issues.[26] The explanation by Ilona Kickbusch, Director of the Global Health Programme at the Geneva Graduate Institute, emphasizes that within global health all contributors to the field need to share the risk and feel the consequences when programs perform poorly:

> The term Global Health stands for a new context, a new awareness and a new strategic approach in matters of international health. Its focus is the impact of global interdependence on the determinants of health, the transfer of health risks and the policy response of countries, international organizations, and the many other actors in the global health arena. Its goal is the equitable access to health in all regions of the globe.[27]

This global health consists of many disciplines relying on one another to collectively improve population health and individual clinical care. The next generation of physicians, public health workers, engineers, nurses, anthropologists, mental health professionals and others must be trained to a defined level of competency in order to cooperate effectively. While many competency-based skills are discipline-specific, knowledge and attitudes can more easily be instilled with a cross-disciplinary approach. To address many of the global health goals, multiple disciplines will need to speak the same global health language (knowledge) and understand their own personal and discipline-specific limitations (attitudes).

CUGH's mission is to "[build] interdisciplinary collaborations and [facilitate] the sharing of knowledge to address global health challenges." In keeping with this mission, it has an Educational Programs Committee and a Global Health Competencies Subcommittee. As a member of both, I offer a trainee's perspective on how to improve global health competency-based education. We recently outlined sets of cross-disciplinary core competencies for global health curricula. The members of the Global Health Competencies

Subcommittee chose the global health definition proposed by Dr. Jeffrey Koplan, Vice President for Global Health at Emory University and former Director of the CDC. According to Koplan et al., global health refers to:

> [A]n area for study, research, and practice that places a priority on improving health and achieving equity in health for all people worldwide. Global health emphasizes transnational health issues, determinants, and solutions; involves many disciplines within and beyond the health sciences and promotes interdisciplinary collaboration; and is a synthesis of population-based prevention with individual-level clinical care.[8]

Koplan et al. emphasize the importance of improved public health and increased access to individualized medical care as broad, collective goals of global health programs worldwide and again highlight the importance of collaboration. While many broad definitions of global health exist, the few that emphasize a cross-disciplinary, collaborative approach to health offer the most success for achieving the overarching goal of improved health globally. These definitions encourage both teachers and trainees, the Global North and the Global South, to work together for improved global health education and, in turn, improved health worldwide.

Competency-Based Education

To work together effectively to improve health globally, trainees first need to achieve competency within this growing field. Competency is defined as "the ability to do something well,"[1] and thus, competency-based education focuses on the instruction necessary to acquire select abilities. Competency-based education is the teaching and assessment of knowledge, attitudes and skills trainees need to succeed within their fields.[7,8] The Association of Schools and Programs of Public Health (ASPPH) has pioneered the majority of the work thus far in competency-based education. As ASPPH highlights, the competency-based model differs from previous training programs in its outcome-based orientation as opposed to an emphasis on training hours and content.[1]

Competencies are the foundation upon which all curricula and training programs should be built. They give trainees obtainable stepwise goals to strive for and provide long-term career-development benefits worldwide. For instance, a recent study from Chang Gung University of Science and Technology in Taiwan demonstrated that nursing students who completed competency-based training during nursing school not only performed better academically on written standardized exams and structured clinical exams, but also had higher rates of employment following completion of their training programs compared to students who completed the former standard curriculum.[1]

Bok et al. recently surveyed 1,137 veterinarians across ten countries regarding the importance of competency-based veterinarian training. The majority of the veterinarians surveyed agreed that competency training is very important: the specific competencies associated with "veterinary expertise" in the survey scored a combined 8.33 on the 9-point Likert scale. The idea that competency-based education is effective for training programs is not a novel one within medicine, as competency-based education has been the foundation of graduate medical education curriculum redesign for over a decade. The Accreditation Council for Graduate Medical Education (ACGME) began its third phase of the national curriculum redesign in 2011, mandating medical residency programs to improve and change their curricula based on the residents' performance upon reaching the six core competencies physicians need to be effective upon graduation.

How Trainees can Improve Current Global Health Programs

The interest in global health careers and training programs and the response to said interest is booming. Approximately 65% of matriculating U.S. medical students were interested in "Global Health education or service" in 2011.[9] Academic institutions and professional societies continue to develop stand-alone global health degree programs and incorporate global health topics into professional school curricula.

There are various reasons why students are interested in global health careers. Some indicate that they would like to participate in cross-cultural experiences and learn how to care for diverse populations prior to entering their professional practice. Many trainees find value in the field experiences provided by global health programs and draw motivation from seeing health disparities in person. Field experiences motivated many to hypothesize solutions for how to improve health equity. Yet, trainees interested in careers in global health have shared training concerns with me. Reading global health-related books, writing research papers and taking the current global health courses are not enough. Many of us have realized that it is very easy to make mistakes during field projects and are concerned that we will continue to make such mistakes in our full-time global health careers without the proper skill sets. This can lead to an ongoing fear that we may do more harm than good in the pursuit of a global health career. Many students at Geisel SOM and within CUGH are continuing to look for more skill-based training opportunities within global health programs for these reasons.

Recently, the CUGH Competency Subcommittee members did a web search for global health training programs syllabi and existing global health competencies and found that no two global health degrees, concentrations, certificates etc. appear to require the same competencies to be achieved. This presents a problem when trainees explore careers within global health. How can a group of individuals with vastly different competency sets be expected to begin working towards the collective global health goals and all be successful in their approach? As Holmes, Zayas and Koyfman from University of Buffalo SOM explain via their medical student pre and post global health experience surveys, there is a need for trainee, self-identified learning objectives to drive improvement of global health field experiences.

My fellow trainees at Geisel SOM at Dartmouth and I hope for competency-based training that is consistent across training institutions and oriented towards real world applications. For future improvement, if the training programs are built on foundations of attainable competencies, they can offer discipline-specific goals for trainees. For example, for the medical resident: be able to assess and manage the obstetrical emergencies of eclampsia, post-partum hemorrhage, perinatal infection and endometritis in a resource-limited setting. For the law student or health policy graduate student: be able to advocate for implementation of policies that protect the Universal Declaration of Human Rights; be able to defend populations' right to affordable and safe health care via individual patient defense cases and population-based healthcare resource distribution policies. For the engineer: be able to develop water purification systems or composting latrines using limited resources and then reverse engineer this energy-efficient method for implementation in a resource-wasteful culture.

While competencies are generally useful for helping trainees understand what is required of them, some faculty in academia have noted that competency-based education does not equate to standardized education. Whitehead, Austin and Hodges, faculty in the Department of Family and Community Medicine in Toronto, argue that "No matter how elegant, no matter how useful, no matter how widely-adopted, any competency framework will be infused with assumptions and embedded in power relations."[18] These "power relations" can affect the dialogue around current pro-

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fessional competency development as they did for the Canadian competency framework, developed as the authors argue to "protect [the] professional turf" of attending physicians. However, as a trainee, I feel trainees can initiate change to this system of competency framework implementation for "economic and socio-political use." Such power relations often exist within academic institutions and within global health program collaborations between the Global North and Global South with professors, program directors and teachers from the Global North setting the agenda. These power relations can be dissolved and competency frameworks can set training standards when trainees are invited to sit in the forums where the competency frameworks are being developed. Trainee input promotes implementation of competencies that are relevant and attainable, preventing the potential problems that arise when academic administrations, far removed from the classroom, are left to develop core curricula.

Proposed Cross-Disciplinary Core Competencies

Many disciplines besides medicine are involved in global health work including engineering, anthropology, nursing, psychology and pharmacy. Thus, to improve global health competency, we must adopt cross-disciplinary competencies acceptable to both trainees and instructors from a range of professions.

In response to this need for cross-disciplinary, competency-based learning within global health curricula, the CUGH Education Committee appointed a Global Health Competency Subcommittee. Our cross-disciplinary Subcommittee members were to "[determine] if there exists a need for broad global health core competencies applicable across disciplines, and if so, what those competencies should be." Based on this directive, our Subcommittee set out to develop core competencies applicable across disciplines. The final list of competency sets, stratified for multiple trainee level needs, will be available in 2015 in The Global Health Competency Subcommittee's manuscript Identifying Interprofessional Global

Health Competencies for 21st Century Health Professionals.

As the trainee voice on the CUGH Educational Committee and Global Health Education Competencies Subcommittee, I worked alongside members from diverse disciplines to develop the proposed core competencies. We did an extensive review of the literature and searched professional societies and webpages to see what global health-related competencies already existed. We compiled and distilled an initial list of 82 competencies across 12 domains.

We then defined four levels of global health training: Global Citizen Level; Exploratory Level; Basic Operational Level, subdivided into Practitioner-Oriented and Program-Oriented; and Advanced Level. Global Citizen Level includes all trainees pursuing post-secondary education. Exploratory Level includes trainees interested in either in-person field exploration or classroom-based exploration of how culture, socioeconomic stratification, resource availability and historical factors impact health globally. The Basic Operational Level is competency required of trainees wishing to spend a moderate amount of time, but not necessarily a career, in global health. The Practitioner-Oriented subset requires competence in applying discipline-specific skills to offer solutions for global health problems. The Program-Oriented subset requires competency in the ability to coordinate, plan, implement and evaluate global health programs. The Advanced Level is aimed at students whose involvement in global health will be significant and sustained, and thus will benefit from more discipline-specific competencies than the Subcommittee's cross-disciplinary ones.

After further distillation of the competencies, the final list included 13 competencies across eight domains assigned to the Global Citizen Level and 39 competencies across 11 domains assigned to the Basic Operational Program-Oriented Level. These competency sets will be important for building strong cross-disciplinary global health education programs necessary to improve trainee preparedness. For instance, the competencies will help prepare all disciplines contributing to global health solutions by making sure all trainees know how to contribute to Capacity Strengthening (Domain 4). The competencies will ensure trainees from all disciplines are instructed to "look for methods to assure program sustainability." If implemented, the competency sets will require trainees to be evaluated on their ability to "demonstrate diplomacy and build trust with community partners," which falls under the overarching category of Collaboration, Partnering, and Communication (Domain 5) More importantly, trainees will increase collaboration and look to other disciplines to help develop solutions because of the emphasis on the competency of "acknowledging one's limitations in skills, knowledge, and abilities."[21]

While these and the rest of the 39 competencies are very important for improving trainee preparedness, this project has shown that we have a long way to go within competency-based global health curricular redesign. If evaluation protocols are not put into place and further investment from developing country institutions is not considered, these competencies will exist merely on paper and perhaps be partially implemented by some global health programs, but there will not be the broad adoption of the proposed competencies by programs worldwide, nor the assurance that trainees are acquiring the skills, knowledge and attitudes proposed, to come closer to reaching the goals of global health.

Future Directions

There is a need to implement the proposed core global health competencies. More importantly, there is a need for improved methods of assessment of these competencies. Throughout the development of these competencies sets, the Subcommittee benefited from various professionals providing input. However, for global health to truly become collaborative there is a need for more input. This input should come from institutions and global health programs in the Global South. Not actively involving developing countries, where many of the effects of global health programs are felt, is negatively impacting the global health education conversations on competency set development. As Ouma and Dimaras explain, much of the current global health education efforts focus on the improvement of student gain from experiential learning

with little focus on the benefit of the host partner institution and its students. This is highlighted by the Global North perspective article by Holmes, Zayas and Koyfman, which encourages the implementation of learning objectives by faculty and medical students to improve the students' "learning

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experiences in global health elective[s]," but does not mention how to improve the experience of the partner institutions or communities.

If global health training programs were more similar to medicine, nursing, engineering or business, where there is a standardized exam at the end of the training, there would be more accountability for the instruction trainees receive. Training programs would also be strengthened if institutions in both the Global North and Global South were invited to write the exam questions and set up the global health hypothetical simulations for the standardized exams. If instructors from both the Global South and the Global North had to assess the results of these exams and simulations for the global health degree-conferring process, global health training would change drastically for the better. Global health training would finally become a true collaboration between instructors and trainees and the Global North and South to produce a generation of competent professionals ready to address the health needs around the world. It would no longer consist of unilateral training programs created by administrators at institutions within the Global North directed at training students to work in the Global South.

While the implementation of competency-based global health education would require many hours worth of meetings on curricular and program reform, the potential hiring of new faculty at academic global health programs to shift from lecture-based to smaller group skill-based learning and a need for current global health programs to pause field projects, the benefits outweigh the risks. In the 2013 fiscal year, the United States government alone spent $8.4 billion on global health programs and The Bill and Melinda Gates Foundation spent over $890 million on their global health program. This does not include the countless dollars spent collectively by other NGOs

and academic institutions on global health field projects and collaborations. While this would require a large investment from many academic faculty and administrators and non-academic global health NGO programs worldwide, continuing to invest considerable dollars in global health programs each year without the assurance that we are training future global health investors effectively is not sustainable. This collaborative global health education reform would require the same international team leadership model for rollout as the Gates Foundation committees or PEPFAR or CUGH, and thus is doable if many global health players are willing to take up the cause.

With increased student interest in global health and a push towards interprofessional collaborations, the need for specific cross-disciplinary core competencies to guide global health training is evident. Trainees need to encourage the implementation of competency-based global health education throughout our various disciplines. Since the effectiveness of global health programs and interventions relies on the preparedness of many health and non-health professionals, identification and implementation of a cross-disciplinary framework is essential. Cross-disciplinary sets of competencies should be developed with input from both the Global North and Global South. This new global health educational framework can give trainees concrete goals to achieve and a sense of equal-preparedness worldwide before we start our careers in global health

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