

Going Global: Considerations for Introducing Global Health Into Family Medicine Training Programs

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Medical students and residents have shown increasing interest in international health experiences. Before attempting to establish a global health training program in a family medicine residency, program faculty must consider the goals of the international program, whether there are champions to support the program, the resources available, and the specific type of program that best fits with the residency. The program itself should include didactics, peer education, experiential learning in international and domestic settings, and methods for preparing learners and evaluating program outcomes. Several hurdles can be anticipated in developing global health programs, including finances, meeting curricular and supervision requirements, and issues related to employment law, liability, and sustainability.

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Interest in global health among US medical trainees has increased substantially in the past 2 decades. In 1984, 6.2% of graduating US medical students undertook international health experiences. In 2006, 27% of students participated in such experiences.^{1,2}

Medical schools are responding to increased student demand by increasing global health curricula and experiences.³ Graduate medical education (GME) in fields as varied as surgery,⁴ emergency medicine,⁵ pediatrics,⁶ internal medicine,⁷ and family medicine⁸ are also responding to increased demand. The field of emergency medicine has gone so far as to create a consensus and standards for fellowship programs in international emergency medicine, and 6.8% of US allopathic emergency medicine programs currently offer such fellowships.⁹ Additionally, some GME activities in global health are being formally linked to training for underserved domestic populations.¹⁰

Family medicine residency programs are increasingly interested in expanding their global health train-

ing activities. A 1998 study found that 45% of programs surveyed offered some form of global health exposure, and 15% offered financial or curricular support for such activities.¹¹ Program directors are responding in part to a growing body of evidence of the benefits of global health training, including improved physical exam skills, increased resource consciousness when making diagnostic and treatment decisions, experience working with underserved populations, and increased interest in primary care.¹²⁻¹⁵ Further, at a time when medical students' interest in family medicine is on the wane, programs are increasingly aware of the recruiting value of global health offerings.^{7,8,16}

Program directors and faculty interested in expanding or establishing global activities can learn much from the lessons of existing programs. This article reviews considerations and challenges facing program directors who wish to establish or expand their global health training in family medicine residency programs.

Considerations in Establishing Global Health Training in Family Medicine

When considering the addition of global health components to their training activities, program directors must consider a number of questions. These questions pertain to goals, champions, resources, and the type of training being considered.

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What Are the Goals of the Proposed Global Health Program?

In addition to training residents in the field of global health, there are often secondary goals of global health programs. It is important to explicitly define such goals at the outset of program development and to adopt the infrastructure necessary to meet those goals.

For example, a program aiming to deliver sustainable health services abroad with a mission of international education might wish to explore the formation of non-profit entities capable of supporting extradepartmental fund-raising and the staffing needs necessary to support this aim. Formed to complement the international education activities of the Department of Family Medicine at the University of Cincinnati, the nonprofit transnational organization Shoulder-to-Shoulder¹⁷ now supports year-round global health service delivery and community development at sites visited by family medicine educators and trainees from six institutions. These include educators from the University of Cincinnati, the University of Rochester, the University of Pittsburgh, the University of North Carolina, Virginia Commonwealth University, and the University of Wyoming.

Educators may choose to establish a longitudinal educational mission for trainees. Family medicine educators in sites such as, for example, the University of California-San Francisco, University of Cincinnati, Marshall University, University of Rochester, and Case Western Reserve University have all started global health tracks to develop residents' research and professional skills through scholarly projects and explicit career development mentoring. Other programs, such as those at the University of Hawaii, Maine Medical Center, and University of Colorado have created educational opportunities for trainees amidst a larger goal of expanding the family medicine model to other countries. A variety of goals are possible, and being cognizant of these during program development leads to more-valuable program evaluation and legacy.

Who Are the Champions?

Successful global health educational programs are frequently built through the tireless efforts of a few champions who can navigate the inevitable challenges of program development. Chairpersons and program directors with interest but no experience in global health education may find champions among departmental leadership but may also want to look in less-obvious places for expertise and support. Discussions with faculty, trainees, administrators, alumni, community members, and others may all help to identify early champions and spur the development of an organizing committee.

Individuals with experience in a variety of domains can be useful for global health program development, including refugee health, public health, cultural

competency, regional studies, economics, patent law, infectious disease, maternal-child health, and political science. Even a little financial and academic support of such a champion can yield great results, as exemplified by the work of Dr Paul Farmer of Harvard University and his efforts to develop Partners in Health.¹⁸

What Resources Are Available to Permit Global Health Training?

Understanding the landscape of support for global training in one's academic center, hospital, or community setting is essential to the long-term success of a program. Are there deans, chairpersons, hospital administrators, consultants, teachers, community leaders, church leaders, and others who are interested in global health and who might help in developing the training program? Are there local or regional donors, corporate entities, or grants makers with shared interests or global activities that may seed the development of an international training site? A baseline assessment and documentation of one's resources, allies, and barriers to success is important for the establishment of a successful program. Program directors may also benefit from contact gathering and information gathering at national conferences of global health educators, such as those sponsored by the Global Health Education Consortium (GHEC) and the American Academy of Family Physicians (AAFP).

What Type of Global Health Training Best Fits the Program and Its Resources?

Depending on the resources identified, some programs elect to offer tracks in global health ("tracks" usually designate a formal, longitudinal program), while others simply permit or help to arrange elective rotations for trainees. Programs may add didactic curricula, including lectures, integrated into their core didactics, block global health courses, or off-site training in tropical medicine.^{19,20} Other programs provide a domestic correlate to global health activities, usually focusing on underserved and immigrant populations.

It is critical for a program to understand that there is no uniform mold for global health program development. By understanding the landscape at one's institution, a unique global health program can evolve. The most successful programs will be those that take stock of their preexisting resources (which are often scattered), unite these resources, and go forward with creativity in a spirit of sustainability.

Components of a Global Health Training Program *Didactics*

Traditional didactic activities, such as conferences, visiting speakers, and faculty presentations, help build a foundation of knowledge for trainees. Tailoring these

activities to trainees' level of interest, experience, and future plans is important. Some residents will require introductory global health training, while others with more experience in the field may need career development guidance and more-graduated discussions.

Many programs are challenged to find individuals who feel comfortable teaching about global health topics. It is often necessary to go beyond the family medicine department to maximize the quality and breadth of didactic sessions. For instance, neighboring schools of public health, other health professions, public policy, and social sciences can be excellent sources of individuals not only with qualifications and experience to teach global health but to expand the horizons of family medicine residents' education. Resources for programs developing global training are outlined in Table 1, including published curricular resources for global health education.^{3,21-23}

The competencies addressed by didactics and other forms of global health training have not been firmly established by the medical education community. There are currently efforts to do so within GHEC and other

bodies. Houpt et al propose undergraduate competencies that span three domains: burden of global disease, traveler's medicine, and immigrant health.²⁴ Additionally, for graduate medical education, it is appropriate to incorporate exposure to career opportunities, both part time and full time, available to licensed physicians. Residents often seek guidance as to the "how" of global health work, rather than the basic "what" that is addressed by factually based competencies of undergraduate education.

Peer Education

One of the best resources for developing and expanding global health education for residents may be the residents themselves. Programs can augment their formal didactics with resident-led seminars and journal clubs. More and more students are entering medical school with significant global exposure and some with significant accomplishments in global health. Programs can capitalize on these trainees by facilitating peer education opportunities. Faculty can facilitate this process by creating or borrowing a core list of journal

Table 1
Resources for Faculty and Curriculum Development in Global Health

Resource	Location	Description
Supercourse—Epidemiology, the Internet, and Global Health: University of Pittsburgh	www.pitt.edu/~super1/index.htm	More than 2,000 archived lectures, with users in developing countries in mind
Modules Project: Global Health Education Consortium	www.globalhealth-ec.org/GHEC/Home/Modules.htm	100 PowerPoint-based modules in development for use in undergraduate and graduate medical education
Global Health Bibliography: Global Health Education Consortium	www.globalhealth-ec.org/GHEC/Resources/GHbiblio_resources.htm	Comprehensive core citations for use by students and faculty interested in global health
Global Health Wikipedia: Child and Family Health International	www.cfhi.org/	A wiki site (like Wikipedia) for global health; currently in development
E-Learning Modules: University of Wales Swansea and University of Ibadan	www.medicine.swan.ac.uk/inthealth.html	E-learning modules on global burden of disease, TB, malaria, HIV/AIDS, obesity, parasitology
GapMinder	www.gapminder.org	Free software to create visual aids from human development and world health statistics
Global Health E-Learning Center: USAID	www.globalhealthlearning.org/	Online courses on a variety of public health, maternal health, disease burden topics
Information Sources: Global Health Council	www.globalhealth.org/sources/	Information resources by a unifying organization
American Society of Tropical Medicine and Hygiene Certificate Training Programs	www.astmh.org/certification/courslst.rtf	Lists and describes 10 US and five international courses in tropical medicine and hygiene open to the public
International Health in the Developing World course: University of Arizona	www.globalhealth.arizona.edu/IHIndex.html	Intensive problem-based orientation course for senior medical students and residents about to embark on a field experience

club topics and articles that can be annually updated, such as the Global Health Bibliography created by the GHEC.²⁵ Peer education not only builds the factual knowledge base but also allows residents to network and problem solve around the challenges of embarking on a career in global health.

Experiential Learning in the International Setting

When residency applicants inquire about global health opportunities on interview day, they often emphasize the opportunity to do international rotations. Implicit in global health training is the international experience component.

There are a variety of mechanisms through which residents can access training in the international setting. Resources to help residents locate international opportunities include the International Health Opportunities Database maintained by GHEC, Students for Global Health,²⁶ Child and Family Health International,²⁷ and Doctors for Global Health.²⁸

Some programs, such as the University of Cincinnati, have a longitudinal partnership with an overseas site that receives residents and medical students for clinical rotations. Other programs rely on residents to organize clinical rotations abroad. There are also a multitude of nonprofit organizations that facilitate such international rotations.

Some residents choose to do non-clinical global health experiences. These can range from month-long internships at the World Health Organization to conducting a local needs assessment or research project.

Experiential Learning in the Domestic Setting

The process of globalization has made local correlates to global health training readily available. Many residents' interest in global health is linked to a dedication to domestic underserved populations. Programs, such as the University of Cincinnati's Family Medicine International Health/Care of Underserved Populations track, have intertwined global and domestic didactics and activities together, offering opportunities for residents to care for underserved populations at home and abroad. These programs permit residents to longitudinally serve or rotate through community health centers and clinics that serve local refugee and immigrant communities.

Although resources available in developing countries are usually significantly less than those in the United States, the challenges created by low health literacy, poor transportation, and limited financial resources are comparable. Thus, domestic correlates among underserved and multicultural US patient populations can complement global health training programs and serve residents' educational goals. In addition, correlation between domestic and international underserved populations can help to justify and fund global health activities.

Preparation and Debriefing

Preparing the learner for work in a global setting is an essential consideration in designing new global health training opportunities in family medicine residencies. Learners will be entering the program with varying degrees of experience, so preparation should be tailored accordingly. Synopses on the topic can be used to guide such preparation,^{22,29} which should include faculty mentoring and research skills. Debriefing should include a formal mechanism for program evaluation.

Mentoring. Structured mentoring is a critical aspect of training residents in global health. Programs short on mentors with global health experience should take advantage of existing networks of global health educators and relationships within their institution and community. Systematically identifying and listing available mentors with a description of their expertise, experience, and global contacts can foster connections between learners and mentors appropriate to their global health interests and desired experiences.

Programs can look to annual and regional organizations that host meetings and listserves, schools of public health/international affairs, and local nonprofit organizations. Table 2 outlines key organizations.

Research and Scholarly Activities

Many block electives and international experiences are built around project work, community surveys, and formal research activities. Community-based research is an excellent vehicle for residents to learn about the needs of global host communities and the effectiveness of interventions aimed at ameliorating those needs. Research can be performed through brief community assessments or participation in ongoing research projects that span visits from multiple residents.

Regardless of the form of research, significant care must be taken to ensure that residents are prepared to perform research, that the projects are feasible within trainees' time constraints, that the research is accepted by and beneficial to the community, and that there is mentoring and support for such efforts.

Preparing residents should involve teaching residents the fundamental principles of community participatory research and basic principles of research ethics.³⁰⁻³² Research projects with proper preparation often provide resources to the community not previously available and can spur community capacity building. Needs assessments help trainees and their hosts focus energies on projects that create long-term improvements in health when forethought is given to sustainability and long-term program evaluation. The importance of a longitudinal commitment by the sponsoring department or institution to a host community or institution cannot be overstated.

Table 2

Organizations for Networking in Global Health

<i>Organization</i>	<i>Web Site or Listserve</i>	<i>Notes</i>
Global Health Council	www.globalhealth.org	An umbrella organization for global health entities. Annual meeting a great source of contacts.
Global Health Education Consortium	www.globalhealth-ec.org	Global health educators from across North America; Web site, annual meeting, and members-only listserv provide resources for new programs
American Medical Student Association-Global Health Action Committee	www.amsa.org/global/	A free dynamic listserv run by a national medical student organization
University Coalitions for Global Health	Web site: www.ucgh.org Listserve: ucgh-subscribe@yahoo.com	An initiative by Global Health Council to support program development and integration at US academic institutions
World Organization of Family Doctors (Wonca)	www.globalfamilydoctor.com/	An association of national organizations of family medicine. A resource for disseminating the family medicine model
American Academy of Family Physicians International Workshop	www.aafp.org/online/en/home/aboutus/specialty/international.html	Conference for Global Health Educators in Family Medicine
Society of Teachers of Family Medicine International Committee	www.stfm.org	Family medicine educators interested in global health training and idea sharing—a resource for networking
Shoulder to Shoulder	www.shouldertoshoulder.org	Nonprofit supporting academic family medicine to form community partnerships in developing settings

Program Evaluation

Evaluation is an important component of successful program continuation and funding. Program success can be defined by a variety of outcomes, including resident job satisfaction, applicant volume, patient satisfaction, faculty job satisfaction, cultural competency levels, scholarly achievements, career impact, capacity building within a host country, changes in health outcomes, attention to underserved communities, patient volume, funding secured, and program recognition.

However a program decides to measure success, it is important to do so consistently and gather such data from the outset. A common method is to survey residents before and after participation in global health programming to detect the effects of such programs. Programs with the capacity to do so may also wish to track health indicators in the population served; to compare pretests and posttests of learner knowledge, attitudes, and cultural competency; and to track students after graduation to determine longer-term influences of global activities.

Hurdles to Developing Global Health Training Programs

Finance

Financing global health experiences for learners and faculty is a hurdle all programs face, and sources

of funding beyond participants themselves are available. Directors will want to become familiar with their regional fiscal intermediary's interpretation of the Center for Medicare and Medicaid Services rules on graduate medical education payments for residents on away electives; these rules vary by location. Soliciting advice from peers at more-experienced programs may be helpful—with creative structuring of electives, some programs have been able to minimize loss of funding for resident participants on global rotations.

Private foundations or church organizations have provided considerable funding for international activities. The Foundation for the Advancement of Medical Education and Research also provides resources for international research and training, and opportunities for mini-fellowships are available through a Yale-Johnson & Johnson program.³³ In addition, the Oregon Health and Science University outlines a number of opportunities at its Web site.³⁴

Other places to seek funding include the World Health Organization, industry with interests in a program's regional work or activity, Department of Health and Human Services grants for residency training (for domestic or territorial activities), and international aid organizations. The US National Institutes of Health John E. Fogarty International Center publishes the *Directory of International Grants and Fellowships in*

*the Health Sciences.*³⁵ Research funding opportunities include the National Institutes of Health (NIH) Global Infectious Disease Research Training Program Award³⁶ and Research Training in Population Health.³⁷ The United States Agency for International Development (USAID) and Global Health Council support grant mechanisms for improving health.^{38,39} Country- or continent-specific support may be found as well.⁴⁰ Working through an established preexisting nonprofit or governmental program is advisable for programs without institutional or private financial support.

Curricular Requirements

The Accreditation Council for Graduate Medical Education (ACGME) and the American Board of Family Medicine (ABFM) develop specialty-specific curricular guidelines. These guidelines determine the maximum amount of elective time a program may offer and set minimum patient numbers to be seen in the family medicine continuity clinic. The ABFM requires 40 weeks in the continuity clinic in any given year and does not allow more than 2 months in a row away from the clinic. While these rules promote continuity, they limit the amount of time available for out-of-town rotations. Programs must thus plan carefully for global health experiences if they are to meet the requirements for residency.

Supervision

Most programs require resident supervision by a board-certified physician in the specialty that is the focus of the rotation. Such individuals, however, may be limited or unavailable at many international sites. Having an on-site faculty member is the ideal way to meet the requirement. Alternatively, having program faculty or volunteer faculty travel with small groups of residents is another way to meet the requirements. Additionally, having residents focus on research versus clinical work may sidestep the requirement, as may partnering with a larger organization that goes on regular missions, such as Doctors Without Borders.

Employment Law

Residents may be contracted by hospitals, universities, or consortia. The employer must follow state law, including regulations related to worker's compensation and disability insurance. Some state programs will not cover overseas experiences, and it may be a violation of state law to not provide this coverage, thus creating a challenging legal situation. University or hospital legal counsel will generally need to be contacted to interpret state-specific regulations.

Liability

"Do I cover my trainee and faculty member or not?" is a frequent subject of discussion in the listserves and

conference halls of global health education. There is limited precedent for medical tort in most countries of the developing world, but this is slowly changing amidst economic globalization. Before deciding about coverage for participants, program directors must determine their institutional policy for malpractice coverage while abroad and the policies of their insurer or university self-insurance office. If there is any flexibility left in decision making at that point, soliciting advice about malpractice law and precedents from host country contacts or global health peers may be helpful.

In some cases, liability waivers from the host government for volunteer medical workers can be obtained. Research electives may not require the same medical liability coverage as clinical rotations.

Finally, protecting participants by requiring or purchasing travel insurance, with specific coverage of medical evacuation, should be considered. Some universities build this into their student health insurance, and otherwise it may be purchased from a wide array of commercial vendors.

Sustainability

When global health experiences involve care delivery, there is a risk that the learner's exposure will be limited to short-term treatment for acute problems. Such experiences should be avoided in favor of experiences that (1) integrate with local health systems to ensure follow-up care and (2) address the determinants of health more broadly, exposing learners to the principles of community-oriented primary care, public health, and sustainable partnerships. Absent these considerations, residents may learn and subsequently repeat an ineffective model of global health involvement. If a residency program is unable to build sustainability into its programming, the program may wish to partner with existing programs emphasizing sustainability, such as Child and Family Health International and Shoulder to Shoulder, Inc.

Conclusions

Despite the hurdles just discussed, family medicine residency programs are increasingly responsive to learner demand for global health training and experience. By strengthening the global health components of family medicine training, the field will be increasingly attractive to internationally minded medical students amidst a diminished primary care applicant pool. This will only increase as learners recognize the skills that training in family medicine offers the future global health provider.

The family medicine community should work to achieve information sharing, collaboration, and coordinated advocacy among global health educators. Family medicine educators should take part in interdisciplinary efforts to establish core competencies and to

standardize graduate medical global health education. Only through engagement can we hope to improve the quality of these endeavors and their impact on trainees and on global health.

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