

ORIGINAL RESEARCH

Exploration of Global Health Careers Across the Medical Fields



Ernest Barthélemy, MD, MA, Vanessa Mallof, MD, Alisse Hannaford, BS, Christian Pean, MD, Rehema Kutua, MD, Christopher de Haydu, MD, Natasha Anandaraja, MD, Ramin Asgary, MD, MPH, Ebrahim Elahi, MD, Braden Hexom, MD, Philip Landrigan, MD, MSc, Taraneh Shirazian, MD, Craig Katz, MD
New York, NY; New Haven, CT; and Chicago, IL

Abstract

BACKGROUND Despite expansion of interest among American medical students in global health (GH), academic medical centers face multiple obstacles to the development of structured GH curricula and career guidance. To meet these demands we sought to provide a systematic analysis of the accounts of GH experts.

METHODS We developed a collaborative, interview-based, qualitative analysis of GH experiences across six career-related themes that are relevant to medical students interested in GH: justification, medical education, economics, research prospects, law and ethics, and work-life balance. Seven GH faculty members were interviewed for 30-90 minutes using sample questions as guidelines. We applied a grounded theory approach to analyze the interview transcripts to discover an emerging theory pertinent to GH trainees.

FINDINGS Regarding *justification*, 4 respondents defined GH as work with the underserved irrespective of geographic location; 5 respondents found sustainability imperative; and all respondents believe GH creates better physicians. Respondents identified many physician competencies developed through GH *medical education*, with 5 respondents agreeing that work with underserved populations has transformative potential. Concerning *economics*, 3 respondents acknowledged GH's popularity among trainees, resulting in increased training opportunities, and 2 respondents emphasized an associated deficiency in program quality. All respondents described career models across specialties. Four respondents noted funding challenges when discussing *research prospects*. Within the theme of *laws and ethics*, 4 respondents perceived inadequate accountability, and 6 respondents identified ways to create accountability. Finally, 6 respondents recognized family demands can compromise one's GH career and thus *work-life balance*.

CONCLUSION Despite diverse perspectives on the meaning and sustainability of GH work, this analysis provides a nascent framework that may inform curricular development for GH trainees. Suggestions are offered for elaborating this framework to fully exploit the transformative potential of GH training in medical education.

KEY WORDS career advising, curriculum development, education, global health, grounded theory.

All authors had access to the data and a role in writing the manuscript.

The authors report no conflicts of interest.

From the Icahn School of Medicine at Mount Sinai, New York, NY (EB, AH, RK, NA, EE, PL, CK); Mount Sinai St. Luke's and Mount Sinai Roosevelt, New York, NY (VM); NYU Langone Medical Center, New York, NY (CP, TS); Yale School of Medicine, New Haven, CT (CH); Weill Cornell Medical College, New York, NY (RA); and Rush Medical College, Chicago, IL (BH). Address correspondence to A.H. (alisse.hannaford@icahn.mssm.edu).

INTRODUCTION

A constant expansion of interest among American medical students in global health (GH) experiences continues to outpace the ability of academic medical centers (AMCs) to provide adequate GH education and training for these students.¹⁻³ Despite increasing awareness of this pedagogic inadequacy, AMCs face multiple obstacles to the development of structured GH curricula and career guidance; such obstacles include a paucity of scientific literature on novel approaches to classroom-based GH education and a lack of faculty mentors with sufficient time and GH experience to advise interested students.^{4,5}

To meet the growing demand for GH education and career guidance, it is incumbent on AMCs to operationalize the domain knowledge and competencies that constitute GH and its available career paths and to integrate this information into the curricula and career advising offered to medical students. The competency model of medical education, and its appropriateness for socially relevant areas of medicine, has been questioned from the perspective that these areas, such as medical ethics, professionalism, and issues of diversity and social justice, are epistemologically distinct from the basic and clinical biomedicine.⁶ Insofar as GH training offers unique insights into these humanistic areas of medicine, the challenge of integrating GH into medical school curricula may create opportunities to enhance medical student understanding of the social role of the physician.^{1,6}

Career advising in GH for medical students presents unique challenges to AMCs.⁷ The variety of career paths available for meaningful GH work, such as short-term missions, long-term international research collaborations, and full-time positions in global nonprofit groups, suggests that any faculty member's experience and expertise in GH is likely to be limited to only a small scope of possibilities available to aspiring GH workers. Moreover, different medical and surgical specialties lend themselves to different models of involvement in GH and might therefore restrict faculty perspectives to their own area of practice.^{1,8} These challenges should be addressed and accounted for in the conceptualization of a framework for advising undergraduate medical students who plan to pursue GH careers.

We report on a collaborative, interview-based, qualitative exploration of 6 career-related themes that are relevant to medical students interested in GH, regardless of medical specialty. Similar approaches have yielded important insights into many issues

encompassed by these themes.^{9,10} The themes, which recur in the GH literature as areas of growing study and debate, include: justification of GH, medical education, economics, research prospects, law/ethics, and work-life balance.^{1,2,5,11-17} This study adds to the existing literature by providing a systematic, hermeneutic analysis of the verbatim accounts of GH experts regarding these themes as they pertain to careers in GH.

METHODS

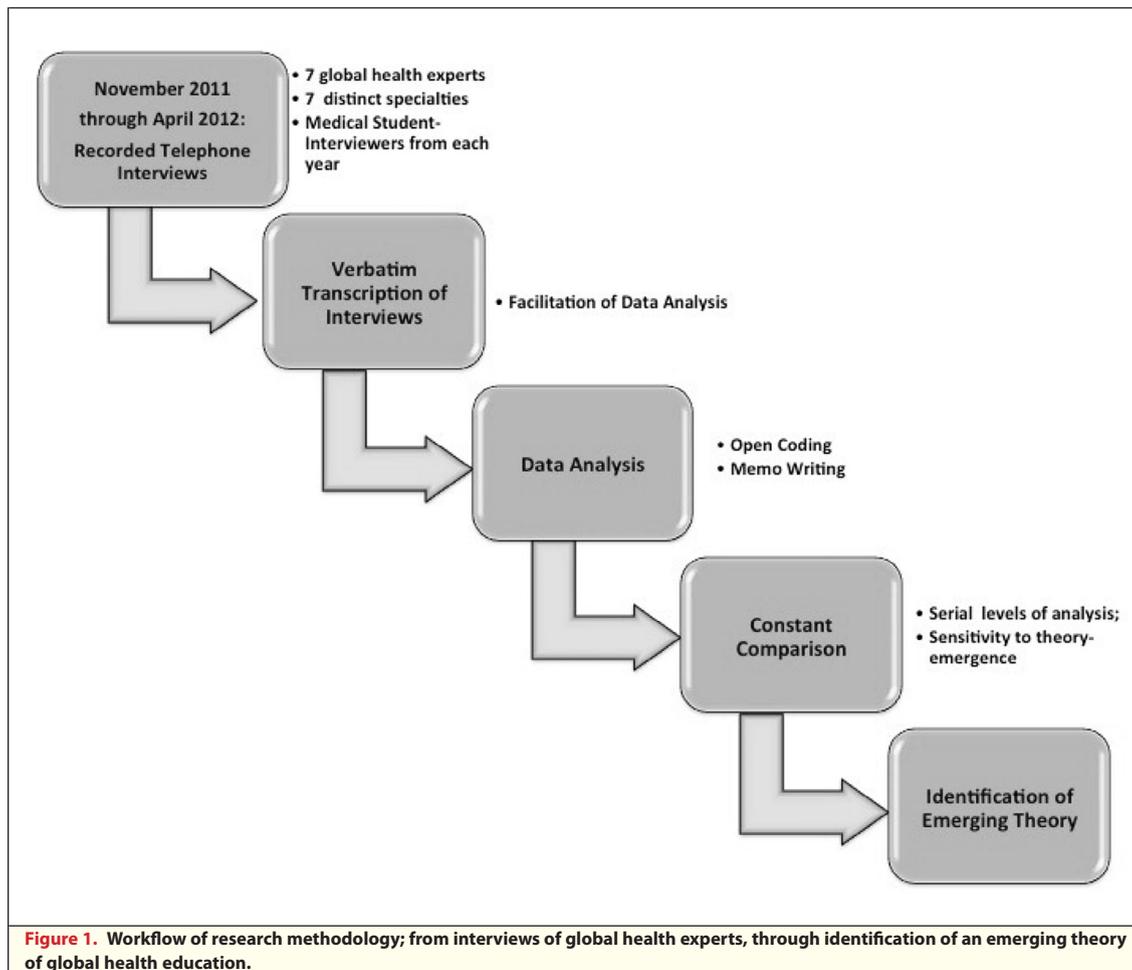
The workflow of our methodology is graphically represented in [Figure 1](#).

Setting. Our study focused on interviews of attending physicians from the Mount Sinai Hospital, identified as leaders in GH by their faculty appointments to the Arnhold Institute for Global Health (AIGH). These interviews explored 6 themes determined by the authors to be of interest and relevance to trainees pursuing GH careers ([Fig. 2](#)).

Participants. Interviews were conducted by student volunteers from each of the 4 classes at the Icahn School of Medicine at Mount Sinai. Potential faculty interviewees were contacted via e-mail using a form letter describing the interview format and inviting them to participate. Seven faculty members were recruited in this manner, representing the medical specialties shown in [Figure 3](#).

Data Collection. To allow for discovery of principles relating to our selected themes within GH, we used a constructivist grounded theory approach.¹⁸⁻²⁰ From November 2011 through April 2012, each of the student interviewers (VMT, CP, CdH, RK) conducted semistructured telephone interviews lasting 30-90 minutes with 1 or more of the participating faculty members. Although the sample questions developed by 1 of the authors (EJB) and shown in [Figure 2](#) were provided as a guideline, student interviewers were encouraged to approach the conversation with sufficient flexibility to allow for exploration of each faculty member's unique perspective, while touching on all 6 interview themes. Recordings of the interviews were transcribed verbatim, and interviewees' responses were transferred into spreadsheets to facilitate data analysis.

Data Analysis. Interview transcripts were openly coded by 2 authors (EJB and VMT). We selected 7 faculty members involved in Global Health at the Icahn School of Medicine at Mount Sinai, representing the specialties listed in the Coding Legend ([Fig. 3](#)). Codes were then compared and refined through a process of focused coding and memo writing until saturation of emergent categories was



CODING LEGEND		
Theme Abbreviation	Medical Specialties	Coding Units
(B) = Work-life Balance	(1) = Obstetrics and Gynecology	1 = First line of text for transcribed response
(E) = Economics	(2) = Environmental Health/Pediatrics	2 = Second line of text for transcribed response...
(J) = Justification of Global Health	(3) = Internal Medicine/Preventive Medicine	Etc., through 100*
(L) = Law/Ethics	(4) = Ophthalmology	
(M) = Medical Education	(5) = Emergency Medicine	
(R) = Research Prospects	(6) = General Pediatrics/Preventive Medicine	
	(7) = Psychiatry	

Figure 3. Coding legend used for data analysis. *Units of text from interview transcripts were labeled using the abbreviations above; for example, the second line of transcribed responses from the emergency medicine provider's comments about work-life balance was labeled as "B5.2." Medical specialties were also analytically labeled to account for specialty-specific differences that might influence respondents' perspectives. In order to anonymize in-article citations, all medical specialty labels have been replaced with, 'X'.

achieved within each interview theme. After development of these categories, data were discussed and actively sampled to conceptualize and elaborate an emerging theory.

RESULTS

Justification. A majority of the respondents (n = 4) defined GH to include work with the underserved

Themes	Sample Questions
Justification of Global Health	"I believe and hope that academic medical centers in the United States will continue to expand their Global Health research, activities and interest, but on what grounds will these institutions base the expansion of such interests?"
Medical Education	"For students like me, with a well-defined interest in global health, does more global health experience = better training as a physician?"
Economics	"To what extent should I be concerned about my ability to earn an income commensurate with my level of training if my desire is to spend a substantial proportion of my time working abroad?"
Research Prospects	"How much of a role should/can I expect to have to play in the way of advocacy for more global health research funding?"
Law/Ethics	"Is there sufficient accountability, and will there need to be some extension of US malpractice law into other countries in order for the global health enterprise to continue growing?"
Work-life Balance	"How will I balance my family life with a career in global health?"

Figure 2. Six themes determined by the authors to be of interest and relevance to trainees pursuing a career in global health.

regardless of nationality, eliminating the potential conflict in attempting to justify international work when needs exist within one's home country.

"The unifying focus of all of our work in global health is we try to focus on underserved populations—and North Dakota certainly qualifies." (JX.5)

Two respondents went so far as to break down any distinction between GH and other areas of health care.

"[I]t's not just, you know, the patient in front of you with the bad cough, but...all the people with the bad cough that can't get to you....And then you don't have to say global health. Health is the same thing." (RX.12-14)

Addressing sustainability was deemed key to justifying GH endeavors. Five respondents insisted that sustainable interventions ideally obviate the need for future intervention, although 3 respondents cautioned against overprioritizing sustainability.

"The idea is very much to make our existence there redundant, but not at the cost of not delivering...I think the issue of sustainability is a little bit overblown,...

think that you don't want to create such a huge barrier to entry that people just put their hands up and don't do it." (JX.25-28)

Sustainable projects include relationships with multiple collaborators, community involvement and empowerment, education, research, efficient use of resources, and advocacy to bridge between short-term aid and lasting sociopolitical solutions.

"[B]ut yes, the more you're there, you are teaching them more...that you want to empower them, and that you're there for those sustainable end-goals and not for yourself." (LX.24)

All of the respondents believed that GH experiences mold trainees into better physicians, whereas 3 respondents claimed its absolute necessity in medical school curricula.

"It's simply not possible to be an effective or compassionate physician in today's world without knowing something about global health and ideally, I think every physician in training should have at least some kind of experience in a developing country." (JX.1)

Medical Education. Respondents highlighted the benefits of GH education in teaching students “real world skill and knowledge that will help them be physicians in a global world” (JX.2), identifying skills such as adaptability, efficiency, cultural competency, research techniques, and clinical expertise. Students additionally acquire an understanding of complex systems and ethics:

“I think international work in and of itself teaches the trainee about all the complexities inherent in medical care, those social/political barriers, language barriers, ethical barriers when you don’t have the resources needed to take care of patients.” (JX.13)

Beyond imparting knowledge and skills, most respondents (n = 5) agreed that work with underserved populations has a transformative potential.

“And there are plenty of students...who have then come back with their eyes opened...and an expanded understanding of what it means to be a physician.” (MX.2-4)

Economics. Three respondents acknowledged GH’s current popularity among trainees, resulting in an increase in training opportunities, and 2 respondents emphasized an associated deficiency in program quality.

“[M]ost medical institutions in the US...don’t have faculty who really have a real experience and understanding of global health; it’s really just more of a train for everybody of the moment, and it’s sexy and everybody want to get on board with it.” (MX.50-51)

Five respondents listed specialties most conducive to GH: ophthalmology, surgery and its subspecialties, emergency medicine, internal medicine, and infectious diseases (IDs). Although some highlight fields “that allow discrete interventions,” 1 respondent suggested ID for its association with well-funded public health initiatives. However, the diversity of the specialties represented by the respondents themselves (Fig. 3) and the lack of agreement among respondents point to multiple paths to a GH career.

“[S]ome individuals from almost every specialty are doing global health.” (RX.12)

All respondents described career models regardless of specialty: short missions (n = 2); an academic track delegating most time abroad to trainees (n = 4); an academic contract compensating international work

(n = 2); positions with large organizations supporting long-term interventions while living abroad (n = 2); and confining GH involvement to one’s career before starting a family or after children have grown (n = 1).

“I direct a global health opportunity in ob-gyn, so it is built into my particular career, so that the time I spend abroad...is covered.” (EX.11)

Research Prospects. Program quality requires a significant investment, and a majority of the respondents (n = 4) lamented the difficulty of obtaining funding, especially for international work and GH training. However, trainees can obtain funding through larger grants, small travel grants, or fundraising. Grant funding has historically followed certain research trends:

“AIDS, tuberculosis and malaria have been the main areas in which there have been, you know, historically funding available through research.” (RX.7)

Another respondent was optimistic about future funding for GH initiatives.

“I think there’s an increasing sense...that global health is an arm of diplomacy and foreign relations. And for that self-interested reason, I think more dollars will flow in, including for research.” (RX.4-5)

Laws and Ethics. A majority of respondents (n = 4) perceived inadequate accountability in GH, and 6 respondents identified ways to create accountability: local licensing and credentialing review, local laws, institutional review board and local approval for research, memorandums of understanding with the community, local grievance processes, local review committees, institutional codes of conduct and project review, ethics training, and personal accountability.

“I think right now the current attitude is, ‘Well, whatever we do is better than nothing.’...So, in that sense it would be good to have some level of accountability.” (LX.46-48)

Work-Life Balance. In addressing work-life balance, all but 1 respondent recognized that having a spouse and/or children demands some sort of compromise with one’s GH career.

“MSF ([Doctors Without Borders]) being kind of the easiest draw for students graduating...until they realize that they can’t bring their partner with them for six months.” (BX.9)

Although 4 respondents provided themselves or their colleagues as examples of practitioners with children who are involved in GH careers, they identified concerns specifically relating to children: safety, education, special needs, and parental absence.

“They hear about all the stuff I do, and I hope that it’s making a positive influence on them and making up for my periodic absences.” (BX.34)

Emerging Theory. Discussion, categorization, and active sampling from the interview data enabled the authors to distinguish an emerging theory regarding GH practice and training: The issues and considerations that arise within GH careers are vastly similar to the concerns of traditional careers in medicine. Regardless of specialty, physicians are challenged to find an economically feasible career model that offers work-life balance. Health care in the United States stands to benefit from sustainable interventions, such as community-based public health solutions. The controversy surrounding medical malpractice and tort reform highlights accountability as a living issue in our society. Biomedical researchers increasingly must struggle with a changing landscape of funding. The educational benefits of GH training strengthen one’s career and humanitarian drive regardless of future involvement in GH. Finally, in a global world where communities are progressively more diverse, including our own complex health care system, all students must learn to navigate social, political, economic, and linguistic issues.²¹ Medical work that is explicitly about “global health” may ultimately be distinguished not by the uniqueness of the issues faced by the global health practitioner but by the number of issues raised at any one time or place and the magnitude thereof.

“So, the problem with GH is that epidemiology is GH, and cataract surgery is global health, studying correlation between cancer and pesticides is GH and psychiatric evaluation is GH—so GH has a wide range of things... it’s really ‘health.’” (EX.28–29)

DISCUSSION

Our analysis of theme-driven interviews with GH faculty reveals that, despite diverse perspectives on the meaning and sustainability of GH work, the convergence of several ideas suggests a nascent framework that may inform curricular development and career advising for trainees entering the field of

GH. In a review examining the role of the anthropologist in the GH arena, Janes and Corbett propose that the goal of GH work is “to reduce GH inequities and contribute to the development of sustainable and salutogenic sociocultural, political, and economic systems,” with an understood moral and ethical commitment to the welfare of the most vulnerable.²² The work of GH may therefore be broadly understood as socioclinical interventions aimed at remedying health inequities that result from systematically exerted injustice, or “structural violence.”²³ The unpreparedness of medical professionals to make such structural interventions has been well described.^{2,24}

Conversations with GH faculty interviewed in this study resulted in convergent insights about the justification of GH work and its ability to produce better physicians—that is, compassionate, skilled, culturally competent physicians able to make sustainable, structural interventions that leverage the efficacy of the clinical interventions that are the traditional focus of physician training. Faculty participants highlighted the struggle between addressing needs abroad when needs exist “at home,” and pointed out that American physicians might be less equipped to deal with foreign cultures and systems. Nonetheless, the public health-related consequences of globalization, such as sharing of pathogens and risk factors, also recurred as a justification for continued work in GH, an argument that is echoed by others in the field.¹ Moreover, several faculty members redefined the concept of GH as simply “health care” focused on the underserved, regardless of geographic location.

GH was therefore seen as a discipline with significant transformative potential in the education of medical students. Faculty participants differed regarding whether GH training should be a mandatory or elective offering in medical education. Furthermore, respondents pointed to variability in funding, research quality, leadership, and mentoring as emerging challenges in the movement to address the rising popularity of GH in AMCs. They agreed, however, that a robust offering of GH training would likely enhance many of the skills, attitudes, and behaviors that AMCs aim to inculcate in their graduates, such as the ability to design and conduct research, leadership and managerial skills, and a desire to work with the underserved and resolve health disparities “at home.” Indeed, American physicians with a high level of GH experience have reported great synergy between postresidency GH activity and their domestic work, with benefits including greater

community involvement, engagement of underserved patients, and promotion of health policy changes.^{3,25}

Respondents in our study represented 6 distinct medical specialties, offering divergent perspectives regarding the most economically feasible areas for GH practice. Although respondents tended to view their own specialty as particularly well suited to GH, they agreed that a “best field” for GH does not necessarily exist, a view supported by the emergence of GH tracks in residency programs of virtually every medical specialty.²⁶ Respondents highlighted the importance of economic considerations of the career-building process, including opportunity costs of doing GH work versus traditional domestic health care and the financial feasibility of part-time versus full-time careers focused on GH.

Financial considerations of academic GH careers were also noted to include the precariousness of the current and future funding environment for GH research and inequitable allocation of research funds relative to the global burden of disease.^{27,28} Funding barriers to GH research careers were said to include a tendency for funders to show less interest in projects focused on training initiatives or public health interventions and relatively greater ease in identifying grants for domestic research on the underserved rather than international projects. However, funding for HIV/AIDS, tuberculosis, and malaria was thought to be an exception to this rule. Ironically, even these latter diseases have been found to suffer from a disproportionately low degree of research funding.²⁷

Several respondents expressed concern regarding lack of accountability among GH practitioners, and they cited examples of volunteer providers traveling abroad to assist in humanitarian emergencies or disaster relief and delivering health care services that might be considered outside their scope of practice back home or that failed to respect some of the fundamental human rights of victims in disaster settings. Some respondents were convinced that the growing popularity of GH would ultimately lead to a reduction in such behavior, as international norms for code of conduct develop to guide GH workers in such contexts. A recent example of such norms is seen in the practice guidelines recommended by Chackungal *et al.*,²⁹ which aim to provide greater accountability and standardization in surgical humanitarian relief efforts.

Regarding work-life balance in GH practice, respondents agreed that marital status can significantly

affect GH work and that although being single may be easier to manage, being married doesn't necessarily prohibit one from pursuing GH work provided that one's partner is supportive. Respondents noted several important considerations for GH workers with children, such as the decision to bring children along to foreign sites versus leaving them at home, the impact of time away from parents, and questions of safety and education needs. Respondents agreed that opportunities, risks, and rewards of involving families in GH work needed to be evaluated on an individual basis and noted that several models for involvement in GH work exist, some of which more readily offer a work-life balance, such as living abroad with one's family or focusing one's work more on GH program management rather than spending time away from home. One respondent emphasized the idea of “tradeoff” or necessary compromise in striking an ideal balance between family life and GH careers; this idea receives similar attention in a recent opinion piece by Slaughter.³⁰

Our findings should be considered in light of some limitations. First, we only interviewed physicians who held faculty appointments in the AIGH at the Icahn School of Medicine at Mount Sinai; physicians who do not participate in this program or who practice at other institutions may have different experiences and express divergent views. Second, we did not systematically assess the extent of GH experience that any respondent has had but instead relied on their participation in the AIGH as a surrogate measure of GH expertise; we are therefore not able to comment on the impact of any respondent's experience in GH on her or his expressed perspectives. Finally, we afforded student interviewers a degree of flexibility in their theme-based interview templates, which may have altered the direction of faculty interviews; different student interviewers may have asked different questions within the same theme, and a standardized survey or interview template may have elicited different responses from faculty respondents.

Future opportunities to build on this work therefore may include survey-based assessment of GH faculty ideas and perspectives on the themes of focus in this study; expansion of the respondent group to include faculty members at other institutions; and development of pilot learning modules to be incorporated into existing GH curricula or organized into an independent, elective GH course offering with assessment of impact on student preparedness to enter the GH field.

REFERENCES

1. Drain PK, Primack A, Hunt DD, Fawzi WW, Holmes KK, Gardner P. Global health in medical education: a call for more training and opportunities. *Acad Med* 2007;82:226-30.
2. Archer N, Moschovis PP, Le PV, Farmer P. Perspective: postearthquake Haiti renews the call for global health training in medical education. *Acad Med* 2011;86:889-91.
3. Greysen SR, Richards AK, Coupet S, Desai MM, Padela AI. Global health experiences of U.S. physicians: a mixed methods survey of clinician-researchers and health policy leaders. *Global Health* 2013;9:19.
4. Lencucha R. A research-based narrative assignment for global health education. *Adv Health Sci Educ Theory Pract* 2014;19:129-42.
5. Nelson BD, Kasper J, Hibberd PL, Thea DM, Herlihy JM. Developing a career in global health: considerations for physicians-in-training and academic mentors. *J Grad Med Educ* 2012;4:301-6.
6. Kumagai AK. From competencies to human interests: ways of knowing and understanding in medical education. *Acad Med* 2014;89:978-83.
7. Ogden AC. *Toward a Research Agenda for U.S. Education Abroad*. Washington, DC: Association of International Education Administrators; 2015.
8. Moren A, Cook M, McClain M, et al. A pilot curriculum in international surgery for medical students. *J Surg Educ* 2015;72:e9-14.
9. Abedini NC, Gruppen LD, Kolars JC, Kumagai AK. Understanding the effects of short-term international service-learning trips on medical students. *Acad Med* 2012;87:820-8.
10. Petrosoniak A, McCarthy A, Varpio L. International health electives: thematic results of student and professional interviews. *Med Educ* 2010;44:683-9.
11. Kerry VB, Ndung'u T, Walensky RP, Lee PT, Kayanja VF, Bangsberg DR. Managing the demand for global health education. *PLoS Med* 2011;8:e1001118.
12. Meier BM, Fox AM. International obligations through collective rights: moving from foreign health assistance to global health governance. *Health Hum Rights* 2010;12:61-72.
13. Gostin LO, Friedman EA. Towards a framework convention on global health: a transformative agenda for global health justice. *Yale J Health Policy Law Ethics* 2013;13:1-75.
14. Ruger JP. Responses to open peer commentaries on "Global health justice and governance." *Am J Bioeth* 2012;12:W6-8.
15. Ishikawa N, Shimbo T, Miyano S, et al. Health outcomes and cost impact of the new WHO 2013 guidelines on prevention of mother-to-child transmission of HIV in Zambia. *PLoS ONE* 2014;9:e90991.
16. Curry LA, Byam P, Linnander E, et al. Evaluation of the Ethiopian Millennium Rural Initiative: impact on mortality and cost-effectiveness. *PLoS ONE* 2013;8:e79847.
17. Gopinathan U, Cuadrado C, Watts N, et al. The political origins of health inequity: the perspective of the Youth Commission on Global Governance for Health. *Lancet* 2014;383:e12-3.
18. Harper D, Thompson AR, Tweed A, Charmaz K. Grounded theory methods for mental health practitioners. In: Harper D, Thompson AR, eds. *Qualitative Research Methods in Mental Health and Psychotherapy: A Guide for Students and Practitioners*. Chichester, UK: John Wiley & Sons; 2011:131-46.
19. Rennie DL, Phillips JR, Quartaro GK. Grounded theory: a promising approach to conceptualization in psychology? *Can Psychol* 1988;29:139.
20. Creswell JW. *Qualitative Inquiry and Research Design: Choosing among Five Approaches*. Thousand Oaks, CA: SAGE Publications; 2012.
21. Galchen R. Every disease on earth: Elmhurst Hospital's medical melting pot. *New Yorker* 2013;50.
22. Janes CR, Corbett KK. Anthropology and global health. *Annu Rev Anthropol* 2009;38:167-83.
23. Farmer P. An anthropology of structural violence. *Curr Anthropol* 2004;45:305-25.
24. Farmer PE, Nizeye B, Stulac S, Keshavjee S. Structural violence and clinical medicine. *PLoS Med* 2006;3:e449.
25. Provenzano AM, Graber LK, Elansary M, Khoshnood K, Rastegar A, Barry M. Short-term global health research projects by US medical students: ethical challenges for partnerships. *Am J Trop Med Hyg* 2010;83:211-4.
26. Kerry VB, Walensky RP, Tsai AC, et al. US medical specialty global health training and the global burden of disease. *J Glob Health* 2013;3:020406.
27. Flory JH, Kitcher P. Global health and the scientific research agenda. *Philos Public Aff* 2004;32:36-65.
28. Head MG, Fitchett JR, Cooke MK, Wurie FB, Hayward AC, Atun R. UK investments in global infectious disease research 1997-2010: a case study. *Lancet Infect Dis* 2013;13:55-64.
29. Chackungal S, Nickerson JW, Knowlton LM, et al. Best practice guidelines on surgical response in disasters and humanitarian emergencies: report of the 2011 Humanitarian Action Summit Working Group on Surgical Issues within the Humanitarian Space. *Prehospital Disaster Med* 2011;26:429-37.
30. Slaughter AM. Why women still can't have it all. *The Atlantic* 2012;July/August.