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The impact of global healthcare experiences on provider practices in the United States: A qualitative study among global health physicians and program directors

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ABSTRACT

Objectives

This qualitative study attempts to understand the perspectives and experiences of United States-based global health physicians and program leaders on how their experiences abroad influence their healthcare practices in the United States.

Design

We administered online questionnaires and open-ended, semi-structured interviews with global health physicians and program leaders affiliated with United States-based academic medical centers. We utilized open coding procedures and content analysis to derive relevant themes from the data.

Participants

Twelve participants completed online questionnaires and eight participants (four survey participants and four additional participants) participated in in-person or phone interviews.

Results

Six themes emerged that highlight how global health physicians perceive their work abroad in shaping their United States-based medical practice: 1) a sense of improved patient rapport, particularly with low-income, refugee, and immigrant patients; 2) improved and more engaged patient care; 3) reduced spending on healthcare services; 4) greater awareness of the social determinants of health; 5) deeper understanding of the United States healthcare system

compared to systems in other countries; and 6) a reinforcement of values that initially motivated physicians to pursue work in global health.

Conclusions

Global health physicians and program leaders expressed that their international engagements improved patient care in the United States. However, these anecdotal observations were contextualized by recognizing the importance of factors such as the social determinants of health and the challenges of changing United States healthcare policy.

ARTICLE SUMMARY

Strengths and limitations of this study

- This study examines how international global health work influences the practices and perceptions of US-based global health physicians and program leaders.
- Using thematic analysis, an online questionnaire and adaptive, semi-structured interviews yielded 6 nuanced themes.
- Low questionnaire response rate and homogeneity of research team members limits generalizability and extent of research findings.

BACKGROUND

Interest in the field of global health has been rapidly growing over the last decade[1-3], as has United States' (US) support for international efforts aimed at improving health in low- and middle-income countries[4]. As a result, many academic medical institutions and organizations have stepped up to meet this demand, offering more opportunities to study, work, and conduct research in the field of global health[5-8]. As of 2016, more than one-third of all matriculated US medical students reported volunteering internationally[9]. To offer medical students opportunities in global health, academic medical institutions must often collaborate with foreign and multinational institutions, both public and private, to create working opportunities and to provide care[10]. These relationships vary by program and school, with the majority providing practical training opportunities, such as global health clinical rotations for medical students and residents, direct service delivery engagements, research opportunities in the health sciences, and diverse training collaborations[11]. Some question the ethics of these engagements as forms of "medical tourism," considering the population health status in the US pales in comparison to other high-income nations[12 13] and because a growing number of foreign- born and foreign-trained physicians immigrate to the US to practice medicine in underserved communities[14]. This healthcare workforce exchange may harm healthcare systems[15 16], and displace financial resources[17].

With the proliferation of global health programs has come a growing body of research and literature examining the impact of global health programs on non-US communities[18-22] and how these programs influence the values and perspectives of short-term global health participants[23]. But a gap remains in how global health work influences the values of post-graduate, licensed physicians who continue to work in global health and what impact these

programs may have on the US communities in which these physicians return to work and live. This qualitative study attempts to understand the perspectives of US-based global health physicians and program leaders on how research and patient care conducted abroad influences their perspectives, values, and healthcare practices back home in the US.

METHODS

Participant and data collection

We recruited participants from two groups: global health physicians and global health program leaders affiliated with academic medical institutions. We developed inclusion criteria to purposively reflect diverse perspectives based on duration of global health experience and positionalities within global health programs. We initially used convenience sampling[24] to recruit participants for the online questionnaire by first identifying academic medical institutions with global health programs through structured online searches, followed by snowball sampling through colleague recommendations and purposeful sampling[25] to recruit additional interviewees. The study recruitment criteria for the global health physician category required participants to match at least one of the following:

1. US-trained, post-residency physicians participating in a global health program based in a World Bank defined low- or middle-income country [26];
2. US-trained physicians currently providing patient care and/or conducting healthcare research or mentorship (including education) for at least one month out of the year in a low- or middle-income country, and who are affiliated with an established global health program supported by an academic medical center; and

3. US-trained physicians who have at least a cumulative of five years of global health experiences in a low- or middle-income country.

The study recruitment criteria for global health program leadership required that participants be program faculty or staff affiliated with an academic medical institution offering an accredited global health program. Several selected participants fit the criteria for both global health physician and global health program leadership and their responses were analyzed within both categories.

We designed the questionnaire and survey questions to elicit open-ended responses about global health physicians' personal experiences researching and practicing abroad, while program leaders were asked questions regarding their experiences overseeing programs and their perspectives on the field more broadly (see Supplemental File 1). Participants who fell into both categories were asked questions from both instruments. Recognizing the ambiguity of key terminology such as global health [27 28], we shared with participants the study's focus on healthcare practices in a global context prior to recruitment. The research instruments consisted of an online questionnaire developed and administered through Research Electronic Data Capture, comprised of open-ended questions and short response questions identifying demographic information.

We utilized an adaptive approach to semi-structured interview techniques[29] by personalizing questions to further explore participant's expertise, positionality, and questionnaire responses. Interviews were recorded, relevant portions were transcribed with structured notes, and then coded (by NMT) and analyzed by hand using thematic analysis (conducted by NMT, DC, SH, and SB) in relation to identified questionnaire themes[30]. We have incorporated researcher comments—distinguished by bracketed text within direct quotations—to provide

clarity to the quote based on information and context provided from the full interview. In the text below, the names of all participants remain anonymous, and are cited using a notational system to differentiate between global health physician and program leadership participant groups, and if the quote comes from an interview or questionnaire; for example, (*Global Health Physician* #1, *interview* [GHP, hereafter]), or *Program Leadership #3,* questionnaire [PL, hereafter]).

Ethics, consent, and permissions

This study received exemption through the Human Subjects Division, University of Washington's Ethical Review Board (00000104) and the Brigham and Women's Hospital Institutional Review Board (2016P000365/BWH). Participants were informed of the study objectives using an electronic information sheet as part of the initial questionnaire and electronic online consent was obtained before beginning any research procedures. Participants who were invited for interviews also gave additional verbal or written informed consent.

Patient and public involvement

Neither patients nor the general public were directly involved in the study design, data collection, or analysis. The underlying research question was informed by a gap in the literature on understanding the impact that global health physicians have on domestic healthcare practices in the US. We hope that these results will inform future research designs that explore these themes in-depth, and connect them with patient-centered outcomes research and other forms of community-based participatory research. We plan to pursue further dissemination of the results to the public and will consider strategies to engage the public.

RESULTS

We sent 159 recruitment emails to global health physicians and global health program leaders at 25 different academic medical institutions. Eight global health physicians and four global health program leaders completed the online questionnaire, while one global health physician and three global health program leaders who completed the questionnaire agreed to participate in a semi-structured interview. We also conducted semi-structured interviews with six global health physicians and two global health program leaders who identified through purposeful sampling. In total, participants represented seven unique academic medical institutions located throughout the US and ranged from 33 to 68 years of age. We present in Table 1 emergent themes identified through analysis of the qualitative data.

Table 1. Themes: How Global Health Work Influences the US healthcare system

Themes	Descriptors
Improved patient rapport	Connection through language, cultural familiarity, and better understanding of patient challenges
Improved and engaged patient care	Patient-centered care, less aggressive treatment
Reduced healthcare spending	More attention to patient history, increased reliance on physical exams, and greater awareness to a culture of frivolous testing
Greater awareness to the social determinants of health and the limits of healthcare	"Connecting the dots", understanding social determinants of health, recognizing similarities between healthcare access between US patients and patients abroad
Rethinking the US healthcare system	A more nuanced understanding of the US healthcare system through comparison with healthcare systems in other countries
Values behind interest in global health	Global health attracts altruistically motivated individuals. Personal values were developed prior to global health work

Improved patient rapport

All eight of the interviewed participants indicated that their global health work had improved their ability to build rapport with and provide care for immigrant, refugee, and low-

income individuals in the US. They attributed perceived improved patient rapport to a variety of reasons, such as being able to speak to patients in their own language, understand their cultural background, and better understand the challenges unique to immigrant, refugee, and low socioeconomic position patients. As one participant noted, "If I bring some of these things up, then I break a barrier and have a good relationship very quickly" (*Global Health Physician #1*, interview). Another participant discussed similar experiences that have helped them build rapport in the emergency department where they work: "I speak a couple languages which working abroad has taught me. I speak Spanish, I speak Creole, so…[with some patients] there is that automatic connection" (*Global Health Physician #3*, interview). Several participants remarked during interviews and in questionnaire responses that patient rapport is vital to the work of caring for patients, and that learning to speak another language was a direct result of their global health work.

Improved and more engaged patient care

Half of participants reported that their global health work improved the quality of care they were able provide to their patients back home. Participants reported this as being "more efficient" as a result of taking better patient histories and physical exams, that they were less inclined to carry out "unnecessary and invasive tests," or more patient-centered[31] as they had a greater awareness to patient's economic and/or cultural context. One participant reported that they were "more likely to speak to a patient about options that did not include very aggressive care," and that they may be "a little more comfortable" offering to "do nothing" (*PL #6*, interview). The following participant quote also exemplifies this theme:

> "Each time I practice abroad and then come back to the US, I find that I am more compassionate and empathetic, because I have been practicing how to focus on the person in front of me while I was away, and to think clinically (instead of focusing on the computer and the paperwork." (*GHP #4*, questionnaire)

Several participants doubted whether these improvements in patient care were significant, and questioned whether they could be accurately measured.

Reduced healthcare spending

The interviewees and questionnaire participants were divided on the extent to which their global health work experience translated into cost savings for US patients. The majority, however, reported that learning to practice medicine with fewer resources translated into more reliance on patient histories, physical exams, and less on medical tests. Several also reported a greater awareness of over-spending patterns in the US healthcare system - as one family physician wrote:

> "I have been able to think more clinically and utilize my medical knowledge in a way that I cannot always do in the US. With limited resources, the physical exam and limited testing becomes critical in diagnosis and following up patient responses to treatment. When I return, I find that I do not need to rely on the technology as much and can focus on the patient." (*GHP #4,* questionnaire)

Participants who did not think that their global health work resulted in cost savings for US patients expressed that they believed the differences in cost savings to be negligible. No participants reported feeling that global health work resulted in more costly care for US patients or the healthcare system.

The social determinants of health and the limits of healthcare

Half of the study participants reported global health work gave them a better understanding of the broader, underlying factors that contribute to patient health, including the challenges of accessing healthcare. This was reported as either reinforcing participant's prior perspectives on the social determinants of health, or helping participants to recognize the social and political-economic factors related to health both abroad and in the US. One global health physician working in internal medicine responded that their work abroad led to a broader sense of why their patients are "how they are, so it is not just they are uneducated, it is also their father is an alcoholic and also that they are addicted to pain pills, and also that they are overweight." Here global health work "helps you connect the dots between seemingly unconnected psychosocial things" *(GHP #*3, interview). This participant located this thinking within the social determinants of health more broadly:

> "Poverty, corruption, gender inequality, lack of education, years of war and the subsequent post-traumatic stress disorder that affects an entire nation all are the biggest influencers of well-being." (*GHP #3,* questionnaire)

Several participants discussed the distinction between healthcare and health, often in the

context of doubting the extent to which global health physicians could, themselves, improve health through providing healthcare in the US or abroad. As one participant wrote, "my experience working abroad has strengthened my belief that 'well-being' (or 'health' as defined by the World Health Organization) is very minimally influenced by the medical care I provide as an individual physician and also minimally influenced by the medical care provided by a healthcare system" (*GHP #3,* questionnaire). These participants advocated for a more nuanced understanding of the factors that influence health and felt that their global health work either brought them to this realization, or reaffirmed their understandings of the social determinants of health.

Rethinking the United States healthcare system

Seven out of the eight interview participants acknowledged the importance of their global health work in helping to better understand the strengths and weaknesses of the US healthcare system. This was attributed to a variety of factors unique to the field of global health, such as conversations with non-US healthcare practitioner counterparts and experience working within non-US healthcare systems, as these two responses reveal:

> "I have had a lot of conversations with colleagues in Ukraine, because they are undergoing a lot of reform...we have a lot of talks about the kind of differences, weakness in each [Ukraine and US healthcare systems] and what is similar." (*PL #7,* interview)

> "Having the experience of working in many different healthcare systems... allows you to see in every variety and every system there are things that work well and things that don not." (*PL #6,* interview)

Participants framed these comparisons on the weaknesses of the US healthcare system by discussing the motivations and standard practices of other healthcare systems. As one participant noted during an interview, "The goal of many countries' healthcare system is to serve their citizens fully…They start off in a different place than where we are" (*PL #7*, interview).

Participants also contrasted the cultural role of healthcare in various settings. These discussions were focused on perceived changes or shortcomings in US healthcare practices that negatively affected patient care, as well as physician satisfaction and prestige. One participant noted that they "do not get the experience of saving lives in the US" and "I do not get the same level of gratitude from the patients" (*GHP #3*, interview). This perspective was reiterated by another participant who discussed how they and other physicians "look nostalgically to a time when there was more enthusiasm for the work that physicians did"; though, they "try to keep the dissatisfying thoughts at bay." This was attributed to them spending "a lot of time doing paperwork, less time doing patient interaction or [having] meaningful patient interaction" (*PL #6*, interview). The following participant quote exemplifies how participants framed their perceptions of the US healthcare system. They perceived a decline in the US healthcare system and that global health work was seen as a more personally beneficial and altruistic endeavor:

"We do not practice evidence based medicine anymore [in the US], we practice lawsuit based and insurance based medicine now. I am a hired gun here. I collect a paycheck and then go back [abroad]." (*GHP #3*, interview)

Several interview participants identified current and future potential challenges of infectious disease epidemics to the US healthcare system, and the perceived benefits of global health work in primary, secondary, and tertiary prevention. One participant noted, "If we are not prepared to fight that pandemic, like Ebola or Severe Acute Respiratory Syndrome, in the place where it starts then that will eventually come to anybody anywhere in the world" (*PL #6,* interview). Another participant discussed epidemics and the perceived benefits of global health work to infectious disease control:

"I see a lot of infections when I'm overseas that then periodically show up here and I think I'm one of the few people that could actually like deal with [it]. So, it informs the technical aspect of my job." (*PL #6*, interview)

One of the primary research questions was whether a greater recognition of the strengths and weakness of the US healthcare system could lead to a culture of change amongst global health physicians in their US sites of practice. The participants responded in a variety of ways – most of which contained elements of doubt, cynicism, disinterest, or a perceived greater ability to support impactful changes to foreign healthcare systems. Discussing their personal experiences with the US healthcare system, one participant noted: "There are so many competing agendas, and it is the big money that is going to win out. I hate to sound cynical" (*PL #7*,

interview). Another participant explained that their work providing technical expertise to the Kenyan Health Ministry "can make public health decisions that have a big impact much more easily than anybody here can have" (*PL #6,* interview). Several participants discussed how they had previously been involved in US healthcare advocacy and reform work, but had either lost interest, were too busy with their global health work, or had felt that they were able to bring about more meaningful reforms in non-US healthcare systems:

> "One of the things is I used to follow US medical care, a lot, but I can't keep up, just because I try to keep up with things going on overseas...I used to know a lot about this stuff." (*PL #2,* interview)

Values behind interest in global health

All interviewed participants reported that their values were not changed by their global health work, but rather their values drove them to pursue global health in the first place—or allowed them to "find a niche in which to put their values, (*Program Leadership,* interview #2), as one participant noted. Furthermore, five interviewees mentioned that global health was a field that self-selected for individuals with altruistic values:

> "I think that many people who choose to do global health [have] ...stronger altruistic focus or willingness to devote their time." (*Global Health Physician #1*, interview)

Several participants mentioned that their values came from their familial upbringing, religious background, or political ideology, and that pursuing careers in global health was a way for them to put their values into practice.

DISCUSSION

This exploratory study contributes to an expanded understanding of the ways in which global health physicians and global health program leaders understand their work in relationship to the field of global health and the US healthcare system. Study participant responses reflect a shared understanding of the ways in which the US healthcare system treats patients as 'paying customers'—a product of the US fee-for-service and for-profit healthcare model[32]—in comparison to the non-profit, universal, or single payer models of healthcare delivery experienced by global health physician participants while abroad. Participants said that the US healthcare system manifests in problematic physician-patient relationships, too much time devoted to bureaucratic requirements, excessive fear of litigation, frivolous spending, overly aggressive medical care, and a disconnect between care providers and the lived experiences of low-income and immigrant patients, all perspectives noted in other studies[31 33-35].

Participants report that their personal values motivate them to pursue global health careers, a notion supported by studies on career choice selection[36] and short-term global health residency electives[23]. They describe global health work as personally rewarding, a counterweight to personal frustrations resulting from the US healthcare system. Several participants explicitly state that global health work is a return to their altruistic values, an opportunity to "save lives", or to serve regardless of cost. In contrast, they describe practicing in the US as prioritizing pleasing the patients and the 'worried well' (as opposed to healing people, and understanding the

broader roots of affliction), practicing "insurance medicine" or "liability medicine", or "customer service". They attribute these perceptions to either the volunteer nature of their global health work, their experiences working in non-US healthcare systems, or witnessing different provider-patient relationships while abroad.

The most significant division amongst participants is whether they viewed their global health work as a vehicle for change on individual care, and/or systemic changes in the US. Those that did report positive benefits of global health for improved patient-care and the changes to the US healthcare system overall discuss these more at the individual level—such as reduced spending, better patient care, and replicating interventions that had proven effective abroad. These findings are supported by similar research looking at the perspectives of short-term global health residency electives[23], international clinical rotations[37], and other global health engagement[38]. Additionally, several participants point to the role of global health physicians in preventing pandemics by being better prepared at recognizing new infectious diseases, going to the source of the outbreak, and identifying the need for the US healthcare system to take pandemic threats more seriously.

A majority of participants reported having a better understanding of the weaknesses and strengths of the US healthcare system as a result of their global health work. Other studies argue that global health experiences can serve the needs of the healthcare system by increasing the number of physicians who go into a primary care field and practice medicine in resource poor settings[37].

Participants who consider the impact of global health work on US patient care point to US national policies and the social determinants of health as being more important for improving patient health. These narratives are supported by evidence that points to income and other

economic inequalities as important drivers of poor population health[39], and the realization that, while the US spends more money on healthcare than the rest of the world combined[40], it continues to lag behind other high-income countries in life expectancy[13]. These participants suggest the need for domestic and foreign collective reforms to bring about significant health improvements.

Our study found that global health physicians and global health program leaders do not feel greater agency to bring about policy or systems-level changes to the US healthcare system because of their global health experiences. This could be the result of a multitude of factors, such as an increased awareness to the obstacles that stand in the way of reform, a recognition of the immensity of reform required, or an understanding of the difficulty of bringing about positive changes in the current political context.

Limitations

The homogeneity of the research team is a notable limitation of this study, with lead researchers all from North America and predominantly white men, thus affecting the formulation of the research questions, the data received, and the analysis conducted. We reached out to 159 individuals and programs, 30 opened the questionnaire link, and only 12 completed the questionnaire (7.5% response rate). The study's small sample size was most likely a result of physician and program leadership survey fatigue—which, the research team was told directly by several who declined to participate—limiting the generalizability of our findings. Future qualitative research on this or similar participant demographics should consider survey fatigue and explore ways to increase response rates, such as more in-person interviews and, if ethically feasible, participant observation. We hope that our identified themes can act as a starting point

for future research on the topic of how global health work impacts US patient care. One example might be an experimental study investigating global health physician spending patterns compared to physicians who have not practiced abroad. We also feel that future research seeking to understand the growing interest in the global health field could investigate how perceived conflict of values between altruistically-driven physicians and the US healthcare system could act as a potential force in generating more interest in global health.

CONCLUSIONS

This exploratory qualitative study only begins to scratch the surface of understanding the impact of global health work on US patient care and the US healthcare system. Among the six themes identified through questionnaires and interviews with global health physicians and global health program leaders, three themes were centered on the impact of global health work on US patient care: global health may improve patient rapport for physicians caring for immigrant and low socioeconomic patients, may reduce healthcare spending by providers, and may lead to more effective patient care. The other three identified themes were that global health work is largely motivated by altruistic values, leads to a greater awareness of the social determinants of health, and gives rise to a better understanding of the strengths and weaknesses of the US healthcare system. Participants saw these themes as inter-related, such as how global health work allows for more personally rewarding physician–patient interactions compared to the US healthcare system, which was viewed as flawed, unwieldy, and obdurate, and in need of reform.

STATEMENTS

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Competing interests
NMT is a student at, DC and SB are faculty members at, and DC and SH are employed part-time at a public university (University of Washington). DC and SH are employed by, and BA, SM, and DM work in partnership with a nonprofit healthcare company (Possible) that delivers free healthcare in rural Nepal using funds from the Government of Nepal and other public, philanthropic, and private foundation sources. BA is a faculty member at a public university (University of California, San Francisco). SM and DM are faculty members at a private university (Icahn School of Medicine at Mount Sinai). DM is a non-voting member on *Possible*'s board of directors but receives no compensation. All authors have read and understood BMJ Open's policy on competing interests and declare that we have no competing financial interests. The authors do, however, believe strongly that healthcare is a public good, not a private commodity.

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Author contributions:
Conceived and designed the study: NMT, DC, SH, SB, DM
Collected and analyzed the data: NMT
Wrote the manuscript draft: NMT, DC, SH
Edited and revised the manuscript draft: all authors
Reviewed and approved the final manuscript draft: all authors

Data sharing statement:
The datasets supporting the conclusions of this article are available are available in de-identified form on the Healthcare System Design Group's (Possible's Implementation Research Team) website (http://hsdg.partners.org/). Data may also be requested by emailing: research@possiblehealth.org.

Ethics approval and consent to participate
This study received exemption through the Human Subjects Division, University of Washington's Ethical Review Board (00000104) and the Brigham and Women's Hospital Institutional Review Board (2016P000365/BWH). Participants were informed of the study objectives using an electronic information sheet as part of the initial questionnaire and electronic online consent was obtained before beginning any research procedures. Participants who were invited for interviews also gave additional verbal or written informed consent.

Consent for publication
No applicable.

Supplemental Materials

Supplemental File 1: Interview Guide

REFERENCES

1. Nelson BD, Kasper J, Hibberd PL, et al. Developing a Career in Global Health: Considerations for Physicians-in-Training and Academic Mentors. *Journal of Graduate Medical Education* 2012;4(3):301-06. doi: 10.4300/JGME-D-11-00299.1
2. Crane J. Scrambling for Africa? Universities and global health. *The Lancet*;377(9775):1388-90. doi: http://dx.doi.org/10.1016/S0140-6736(10)61920-4
3. Federico SG, Zachar PA, Oravec CM, et al. A successful international child health elective: The university of colorado department of pediatrics' experience. *Archives of Pediatrics & Adolescent Medicine* 2006;160(2):191-96. doi: 10.1001/archpedi.160.2.191
4. Hamel L, Kirzinger A, Brodie M. 2016 Survey of Americans on the U.S. Role in Global Health: The Henry M. Kaiser Family Foundation, 2016.
5. Crane JT. Scrambling for Africa : AIDS, expertise, and the rise of American global health science. Ithaca: Ithaca : Cornell University Press 2013.
6. Lasker J. Hoping to help : the promises and pitfalls of global health volunteering. Ithaca: Ithaca : ILR Press, an imprint of Cornell University Press 2016.
7. Crump JA, Sugarman J. Ethical considerations for short-term experiences by trainees in global health. *JAMA* 2008;300(12):1456-58. doi: 10.1001/jama.300.12.1456
8. Kanter SL. Global Health is More Important in a Smaller World. *Academic Medicine* 2008;83(2):115-16. doi: 10.1097/01.acm.0000305155.66318.58
9. Matriculating Student Questionnaire: 2016 All Schools Summary Report: Association of American Medical Colleges, 2016.
10. McCoy D, Mwansambo C, Costello A, et al. Academic partnerships between rich and poor countries. *Lancet* 2008;371 doi: 10.1016/s0140-6736(08)60466-3
11. Kerry VB, Walensky RP, Tsai AC, et al. US medical specialty global health training and the global burden of disease. *Journal of global health* 2013;3 doi: 10.7189/jogh.03.020406
12. Bezruchka S. Medical tourism as medical harm to the third world: Why? For whom? *Wilderness Environ Med* 2000;11 doi: 10.1580/1080-6032(2000)011[0077:mtamht]2.3.co;2
13. Council NR. Explaining Divergent Levels of Longevity in High-Income Countries. Washington, DC: The National Academies Press 2011.
14. Hart G, Skillman S, Fordyce M, et al. International Medical Graduate Physicians In The United States: Changes Since 1981. *Health Aff* 2007;26(4):1159-69. doi: 10.1377/hlthaff.26.4.1159
15. Mills EJ, Schabas WA, Volmink J, et al. Should active recruitment of health workers from sub-Saharan Africa be viewed as a crime? *The Lancet* 2008;371(9613):685-88. doi: https://doi.org/10.1016/S0140-6736(08)60308-6
16. Hagopian A. Recruiting Primary Care Physicians From Abroad: Is Poaching From Low-Income Countries Morally Defensible? *The Annals of Family Medicine* 2007;5(6):483-85. doi: 10.1370/afm.787
17. Loiseau B, Sibbald R, Raman SA, et al. 'Don't make my people beggars': a developing world house of cards. *Community Development Journal* 2016;51(4):571-84. doi: 10.1093/cdj/bsv047
18. Green T, Green H, Scandlyn J, et al. Perceptions of short-term medical volunteer work: a qualitative study in Guatemala. *Global Health* 2009;5(1):4. doi: 10.1186/1744-8603-5-4
19. Shah S, Wu T. The medical student global health experience: professionalism and ethical implications. *J Med Ethics* 2008;34 doi: 10.1136/jme.2006.019265

20. Wendland CL. Moral Maps and Medical Imaginaries: Clinical Tourism at Malawi's College of Medicine. *American Anthropologist* 2012;114(1):108-22. doi: 10.1111/j.1548-1433.2011.01400.x
21. Redko C, Bessong P, Burt D, et al. Exploring the Significance of Bidirectional Learning for Global Health Education. *Annals of Global Health* 2016;82(6):955-63. doi: https://doi.org/10.1016/j.aogh.2016.11.008
22. Lough BL, Matthew L. Forum Discussion Paper 2013: Measuring and Conveying the Added Value of International Volunteering: International Forum for Volunteering in Development, 2013.
23. Gupta AR, Wells CK, Horwitz RI, et al. The International Health Program: the fifteen-year experience with Yale University's Internal Medicine Residency Program. *The American Journal of Tropical Medicine and Hygiene* 1999;61(6):1019-23. doi: doi:https://doi.org/10.4269/ajtmh.1999.61.1019
24. Convenience Sample. In: Given L, ed. The SAGE Encyclopedia of Qualitative Research Methods. Thousand Oaks, California: SAGE Publications Ltd 2008.
25. Bernard HR. Research methods in anthropology : qualitative and quantitative approaches. 2nd ed. ed. Thousand Oaks, CA: Thousand Oaks, CA : Sage Publications 1994.
26. World Development Indicators: World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators.
27. Koplan JP, Bond TC, Merson MH, et al. Towards a common definition of global health. *The Lancet* 2009;373(9679):1993-95. doi: https://doi.org/10.1016/S0140-6736(09)60332-9
28. Beaglehole R, Bonita R. What is global health? *Global Health Action* 2010;3(1):5142. doi: 10.3402/gha.v3i0.5142
29. DiCicco-Bloom B, Crabtree BF. The qualitative research interview. *Medical Education* 2006;40(4):314-21. doi: 10.1111/j.1365-2929.2006.02418.x
30. Pope C, Ziebland S, Mays N. Analysing qualitative data. *Bmj* 2000;320(7227):114.
31. Lateef F. Patient expectations and the paradigm shift of care in emergency medicine. *Journal of Emergencies, Trauma, and Shock* 2011;4(2):163-67. doi: 10.4103/0974-2700.82199
32. Brock DW, Buchanan A. For-Profit Enterprise in Health Care. In: Gray B, ed. Washington, DC: The National Academies Press 1986:580.
33. Staiger DO, Auerbach DI, Buerhaus PI. Health Care Reform and the Health Care Workforce — The Massachusetts Experience. *New England Journal of Medicine* 2011;365(12):e24. doi: 10.1056/NEJMp1106616
34. Sinsky C, Colligan L, Li L, et al. Allocation of physician time in ambulatory practice: A time and motion study in 4 specialties. *Annals of internal medicine* 2016;165(11):753-60. doi: 10.7326/M16-0961
35. Bentley TGK, Effros RM, Palar K, et al. Waste in the U.S. Health Care System: A Conceptual Framework. *Milbank Quarterly* 2008;86(4):629-59. doi: 10.1111/j.1468-0009.2008.00537.x
36. Ledley FD, Lovejoy FH. Factors Influencing the Interests, Career Paths, and Research Activities of Recent Graduates From an Academic, Pediatric Residency Program. *Pediatrics* 1993;92(3):436.
37. Drain PK, Primack A, Hunt DD, et al. Global health in medical education: a call for more training and opportunities. *Acad Med* 2007;82 doi: 10.1097/ACM.0b013e3180305cf9

38. Ruchman SG, Singh P, Stapleton A. Why US Health Care Should Think Globally. *AMA journal of ethics* 2016;18(7):736-42. doi: 10.1001/journalofethics.2016.18.7.msoc1-1607 [published Online First: 2016/07/22]
39. Bezruchka S. The Hurrider I Go the Behinder I Get: The Deteriorating International Ranking of U.S. Health Status. *Annual review of public health* 2012;33(1):157-73. doi: 10.1146/annurev-publhealth-031811-124649
40. Avendano M, Kawachi I. Invited Commentary: The Search for Explanations of the American Health Disadvantage Relative to the English. *American Journal of Epidemiology* 2011;173(8):866-69. doi: 10.1093/aje/kwq484

Global Health Physician (GHP) Study – Interview Guide

Summarize before starting the interview: research topic, inform time required for interview, ask for permission to record.

Our informal discussion/interview will last between 30-60 minutes. We've drafted some questions to help guide this semi-structured interview, but are also interested in your own thoughts, reflections, and experiences about global health physician practice.

1. Tell me about a little about your Clinical and/or Research work abroad.

2. Over _____ years working abroad, how has your perspective changed?

3. I know you've worked in quite a few different countries, including _____. How do you reflect on these experiences?

3. You mentioned in your survey that your global health work has influenced your perspective by _____.*

   If participant doesn't answer above with specific events: "Are there any anecdotes, experiences, or people that influenced your perspective?"*

4. What was it about the nature of your work, or the location in which you worked that influenced this perspective?

5. How does, if at all, your global health work inform your perspective on the US healthcare system?

6. The field of global health is rapidly growing; what are your thoughts on this phenomenon?

7. Do you feel an agency to bring about change? If so, how, where, and to what extent?

8. Of your colleagues, students, or program associates who also work abroad, how have they been changed by their experiences? Do you talk about these changes?

9. How are physicians who work abroad different than physicians who do not? In regards to personal values or how they practice medicine?

10. How important do you think the values and perspectives of physicians are before they work abroad in shaping their global health experiences?

11. Is there anything further you'd like to tell or reflect on, or you feel is worth asking other global health physicians or those who work in the field about?

149x194mm (144 x 144 DPI)

Table 1
Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist

No	Item	Guide questions/description	Location in Manuscript
Domain 1: Research team and reflexivity			
Personal Characteristics			
1.	Interviewer/facilitator	NMT administered questionnaire and conducted interviews	
2.	Credentials	MPH-candidate	
3.	Occupation	Student	
4.	Gender	Male	
5.	Experience and training	Graduate-level qualitative methods training	
Relationship with participants			
6.	Relationship established	No	
7.	Participant knowledge of the interviewer	Participants were briefed during online informed consent process about the study purpose, recruitment and study procedures.	Methods/pg 7
8.	Interviewer characteristics	Research team members' positionality described and contextualized.	Discussion/pg 18
Domain 2: study design			
Theoretical framework			
9.	Methodological orientation and Theory	Open coding with thematic content analysis	Methods/pg 6
Participant selection			
10.	Sampling	Convenience and snowball sampling	Methods/pg 5
11.	Method of approach	Prospective participants identified through internet search of global health programs associated with academic medical centers. Individuals were then contacted via email.	Methods/pg 5
12.	Sample size	18	Results/pg7-8
13.	Non-participation	159 recruitment emails sent with	Results/pg7-8

		7.5% response rate. Of 12 participants completing questionnaire, 4 completed interview. 6 additional interview participants identified via snowball sampling. For the participants who completed the questionnaire but not the interview, no reason was given but survey fatigue suspected.	
Setting			
14.	Setting of data collection	Data collected remotely via online questionnaire and phone interview.	
15.	Presence of non-participants	No	
16.	Description of sample	1. US-trained, post-residency physicians participating in a global health program based in a World Bank defined low- or middle-income country; 2. US-trained physicians currently providing patient care and/or conducting healthcare research or mentorship (including education) for at least one month out of the year in a low- or middle-income country, and who are affiliated with an established global health program supported by an academic medical center; and 3. US-trained physicians who have at least a cumulative of five years of global health experiences in a low- or middle-income country.	Methods/pg 5
Data collection			
17.	Interview guide	Questionnaires and interview questions were not provided to participants in advance. General questionnaire and interview content was included in the informed consent process. Both questionnaire and interview guide were pilot-tested. Each interview was adapted to explore participant's expertise, positionality, and questionnaire responses.	Methods/pg

18.	Repeat interviews	Repeat interviews were not carried out, but follow-up questions were posed to some participants via email to clarify interview responses.	
19.	Audio/visual recording	Interviews were audio recorded.	Methods/pg 6
20.	Field notes	Field notes were taken during interviews.	Methods/pg 6
21.	Duration	Interviews lasted between 30-60minutes.	
22.	Data saturation	Thematic saturation was discussed during the ongoing data analysis process. Thematic saturation was not reached nor were ongoing interviews withheld due to thematic saturation.	
23.	Transcripts returned	No, interview transcripts were not returned to participants for clarity.	
Domain 3: analysis and findings			
Data analysis			
24.	Number of data coders	1 coder, NMT.	
25.	Description of the coding tree	A coding tree was not used during analysis.	
26.	Derivation of themes	Preliminary themes were identified during literature review and used to construct categories for questionnaires. Themes for interview probes were identified based on participant questionnaire responses. Thematic analysis was used to identify other emergent themes, presented in results.	
27.	Software	No.	
28.	Participant checking	No.	
Reporting			
29.	Quotations presented	Yes.	Results/pg 9-15
30.	Data and findings consistent	Yes	Results/pg 8
31.	Clarity of major themes	Yes, see Table 1.	Methods/pg 8
32.	Clarity of minor themes	Only major emergent themes are discussed	

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Understanding perceptions of global healthcare experiences on provider values and practices in the United States: A qualitative study among global health physicians and program directors

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Title: Understanding perceptions of global healthcare experiences on provider values and practices in the United States: A qualitative study among global health physicians and program directors

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ABSTRACT

Objectives

The study aim was to qualitatively examine the perspectives of United States-based physicians and academic global health program leaders on how global health work shapes patient care back home in the United States.

Design

A prospective, qualitative exploratory study that employed online questionnaires and open-ended, semi-structured interviews with two participant groups: (1) global health physicians and (2) global health program leaders affiliated with United States-based academic medical centers. Open coding procedures and thematic content analysis were used to analyze data and derive themes for discussion.

Participants

159 global health physicians and global health program leaders at 25 academic medical institutions were invited via email to take a survey and participate in a follow-up interview. Twelve participants completed online questionnaires (7.5% response rate) and eight participants (four survey participants and four additionally recruited participants) participated in in-depth. in-person or phone semi-structured interviews.

Results

Five themes emerged that highlight how global health physicians and academic global health program leaders perceive global health work abroad in shaping United States-based

medical practice: 1) a sense of improved patient rapport, particularly with low-income, refugee, and immigrant patients, and improved and more engaged patient care; 2) reduced spending on healthcare services; 3) greater awareness of the social determinants of health; 4) deeper understanding of the United States healthcare system compared to systems in other countries; and 5) a reinforcement of values that initially motivated physicians to pursue work in global health.

Conclusions

A majority of participating global health physicians and program leaders believed that international engagements improved patient care back home in the United States. Participant responses relating to the five themes were contextualized by highlighting factors that simultaneously impinge upon their ability to provide improved patient care, such as the social determinants of health, and the challenges of changing United States healthcare policy.

ARTICLE SUMMARY

Strengths and limitations of this study

- Online questionnaires along with key informant interviews allowed for a more in-depth examination of physician and program leader perspectives.
- Thematic analysis resulted in five nuanced themes that contributes to an expanded understanding of how global health work shapes a culture of healthcare practice back home in the US; offering further points for research and exploration.

- Thematic saturation was not achieved through data analysis, as low questionnaire response rate and a small number of interview participants limit the generalizability of research findings.

BACKGROUND

Interest in the field of global health has been rapidly growing over the last decade,[1-3] as has United States' (US) support for international efforts aimed at improving health in low- and middle-income countries.[4] As a result, many academic medical institutions and organizations have stepped up to meet this demand, offering more opportunities to study, work, and conduct research in the field of global health.[5-8] As of 2016, more than one-third of all matriculated US medical students reported volunteering internationally.[9] To offer medical students opportunities in global health, academic medical institutions establish partnerships with collaborators in low- and middle-income countries (LMICs), both public and private, in a range of settings.[10] These relationships vary by program and school, with the majority providing short-term (typically no more than two months) training or service learning opportunities, such as global health clinical rotations for medical students and residents, direct service delivery engagements, research opportunities in the health sciences, and diverse training collaborations.[11] Some question the ethics of these engagements as forms of "medical tourism", considering the population health status in the US pales in comparison to other high-income nations[12 13] and because a growing number of foreign- born and foreign-trained physicians immigrate to the US to practice medicine in underserved communities.[14] This healthcare workforce exchange may harm healthcare systems,[15 16] and displace financial resources.[17]

With the proliferation of academic global health programs has come a growing body of research and literature examining the ethics, achievements, and potential unintended consequences of these programs on non-US communities,[2 18-24] as well as how these engagements influence the values and perspectives of global health students,[25] medical

students,[26-28] or residents.[29] But a gap remains in understanding how global health work influences the values and practices of US-based physicians who have worked extensively, and/or those who continue to work intermittently, in a global health setting, and what impacts this work is perceived to have on the US communities in which these physicians return to work and live. This qualitative study attempts to understand the perspectives of global health physicians and program leaders in academic global health on how they believe their work abroad influences their viewpoints, values, and healthcare practices back home in the US.

METHODS

Participant and data collection

We recruited participants from two groups: global health physicians and global health program leaders affiliated with academic medical institutions. We developed inclusion criteria to purposively reflect diverse perspectives based on duration of global health experience and positionalities within academic global health programs. We initially used convenience sampling to recruit participants for the online questionnaire by first identifying academic medical institutions with accredited—by the Council on Education for Public Health (CEPH) or Liaison Committee on Medical Education (LCME)—global health programs through structured online searches, followed by snowball sampling through colleague recommendations and purposeful sampling to recruit additional interviewees. The study recruitment for the global health physician category required participants to match with the following criteria:

1. US-trained post-residency physicians currently providing patient care and/or conducting healthcare research, training, or mentorship (including education) for at least one month

out of the year in a World Bank[30] defined low- or middle-income country and who are either:

a. affiliated with an accredited global health program supported by an academic medical center, or

b. engaged in their work through another organization or company (e.g. an international/non-governmental organization, consulting/technical assistance organization, or multi/bi-lateral development agency).

2. US-trained physicians who have at least five-years of cumulative global health experience in a low- or middle-income country.

The study recruitment criteria for global health program leadership required that participants be program faculty or staff (program coordinators, administrators, and mentors) affiliated with an academic medical institution offering an accredited global health program. Several selected participants fit the criteria for both global health physician and global health program leadership, and their responses were analyzed within both categories.

We designed the questionnaire and survey questions to elicit open-ended responses about global health physicians' personal experiences researching and practicing abroad, while program leaders were asked questions regarding their experiences overseeing programs and their perspectives on the field more broadly (see Supplemental File 1). Participants who fell into both categories were asked questions from both instruments. Recognizing the ambiguity of key terminology such as global health,[31 32] we shared with participants the study's focus on healthcare practices in a global context prior to recruitment. The research instruments consisted of an online questionnaire developed and administered using a Research Electronic Data Capture

database, comprised of open-ended questions and short response questions identifying demographic information.

We utilized an adaptive approach to designing the semi-structured interviews[33] by personalizing questions to further explore participant's expertise, positionality, and questionnaire responses. Interviews were recorded, relevant portions were transcribed with structured notes, and then coded (by NMT) and analyzed by hand using thematic analysis (conducted by NMT, DC, SH, and SB) in relation to identified questionnaire themes.[34] We have incorporated researcher comments—distinguished by bracketed text within direct quotations—to provide clarity to the quote based on information and context provided from the full interview. In the text below, the names of all participants remain anonymous, and are cited using a notational system to differentiate between global health physician and program leadership participant groups, and if the quote comes from an interview or questionnaire; for example, (*Global Health Physician* #1, *interview* [GHP, hereafter]), or *Program Leadership #3,* questionnaire [PL, hereafter]).

Ethics, consent, and permissions

This study received exemption through the Human Subjects Division, University of Washington's Ethical Review Board (00000104) and the Brigham and Women's Hospital Institutional Review Board (2016P000365/BWH). Participants were informed of the study objectives using an electronic information sheet as part of the initial questionnaire and electronic online consent was obtained before beginning any research procedures. Participants who were invited for interviews also gave additional verbal or written informed consent.

Patient and public involvement

Neither patients nor the general public were directly involved in the study design, data collection, or analysis. The underlying research question was informed by a gap in the literature on understanding the impact that global health physicians have on domestic healthcare practices in the US. We hope that these results will inform future research designs that explore these themes in-depth, and connect them with patient-centered outcomes research and other forms of community-based participatory research. We plan to pursue further dissemination of the results to the public and will consider strategies to engage the public.

RESULTS

We sent 159 recruitment emails to global health physicians and global health program leaders at 25 different academic medical institutions. Eight global health physicians and four global health program leaders completed the online questionnaire, while one global health physician and three global health program leaders who completed the questionnaire agreed to participate in a semi-structured interview. In addition, we conducted semi-structured interviews with six global health physicians and two global health program leaders who were identified through snowball and purposeful sampling. In total, participants represented seven unique academic medical institutions located throughout the US and ranged from 33 to 68 years of age. Four participants reported beginning their global health work in the 2000s, two reported beginning in the 1990s, and one each reported beginning in the 1980s and 1970s. We present in Table 1 the domains of engagement in global health for these participants and the emergent themes identified through analysis of the qualitative data in Table 2.

Table 1. Global health domains of engagement among participants

Participants	Category of work abroad
PL1	Care delivery, research, teaching/training, policy/advocacy, program design/monitoring/evaluation
PL2	Research, teaching/training, program design/monitoring/evaluation
PL3	Research, teaching/training, program design/monitoring/evaluation
PL4	Research, program design/monitoring/evaluation
PH1	Research, teaching/training, program design/monitoring/evaluation
PH2	Research, teaching/training, policy/advocacy, program design/monitoring/evaluation
PH3	Care delivery, teaching/training, program design/monitoring/evaluation
PH4	Care delivery, teaching/training
PH5	Care delivery, teaching/training, policy/advocacy
PH6	Care delivery, research, teaching/training
PH7	Care delivery, research, teaching/training, policy/advocacy, program design/monitoring/evaluation
PH8	Research, teaching/training, policy/advocacy, program design/monitoring/evaluation

Table 2. Themes: Perceptions of how global health work influences patient care in the US

Themes	Descriptors
Improved and more engaged patient rapport & patient care	Connection through language, cultural familiarity, better understanding of patient challenges, patient-centered care, and less aggressive treatment.
Reduced healthcare spending	More attention to patient history, increased reliance on physical exams, and greater awareness to a culture of frivolous testing
Greater awareness to the social determinants of health and the limits of healthcare	"Connecting the dots", understanding social determinants of health, recognizing similarities between healthcare access between US patients and patients abroad
Rethinking the US healthcare system	A more nuanced understanding of the US healthcare system through comparison with healthcare systems in other countries
Values behind interest in global health	Global health attracts altruistically motivated individuals. Personal values were developed prior to global health work

Improved and more engaged patient rapport & patient care

All eight of the interviewed participants indicated that their global health work had improved their ability to build rapport with and provide care for immigrant, refugee, and low-income individuals in the US. They attributed perceived improved patient rapport to a variety of reasons, such as being able to speak to patients in their own language, understand their cultural background, and better understand the challenges unique to immigrant, refugee, and patients of low socioeconomic position. As one participant noted, "If I bring some of these things up, then I

break a barrier and have a good relationship very quickly." (*GHP #1*, interview) Another participant discussed similar experiences that have helped them build rapport in the emergency department where they work: "I speak a couple languages which working abroad has taught me. I speak Spanish, I speak Creole, so…[with some patients] there is that automatic connection." (*GHP #3*, interview) Several participants remarked during interviews and in questionnaire responses that patient rapport is vital to the work of caring for patients, and that learning to speak another language was a direct result of their global health work.

Half of participants reported that their global health work improved the quality of care they were able provide to their patients back home. Participants reported this as being "more efficient" as a result of taking better patient histories and physical exams, that they were less inclined to carry out "unnecessary and invasive tests," or being more patient-centered[35] as they had a greater awareness to patient's economic and/or cultural context. One participant reported that they were "more likely to speak to a patient about options that did not include very aggressive care," and that they may be "a little more comfortable" offering to "do nothing." (*PL #6*, interview) The following participant quote also exemplifies this theme:

> Each time I practice abroad and then come back to the US, I find that I am more compassionate and empathetic, because I have been practicing how to focus on the person in front of me while I was away, and to think clinically (instead of focusing on the computer and the paperwork. (*GHP #4*, questionnaire)

Several participants doubted whether these improvements in patient care were significant and questioned whether they could be accurately measured. "I don't feel that physician experience abroad translates into worsened quality of patient care in the U.S. I can't assume that it translates into improved quality of patient care in the U.S either." (*GHP #3*, questionnaire)

Reduced healthcare spending

The interviewees and questionnaire participants were divided on the extent to which their global health work experience translated into cost savings for US patients. The majority, however, reported that learning to practice medicine with fewer resources translated into more reliance on patient histories, physical exams, and less on medical tests. Several also reported a greater awareness of patterns of over-spending in the US healthcare system as one family physician wrote:

> I have been able to think more clinically and utilize my medical knowledge in a way that I cannot always do in the US. With limited resources, the physical exam and limited testing becomes critical in diagnosis and following up patient responses to treatment. When I return, I find that I do not need to rely on the technology as much and can focus on the patient. (*GHP #4,* questionnaire)

Participants who did not think that their global health work resulted in cost savings for US patients expressed that they believed the differences in cost savings to be negligible. No participants reported feeling that global health work resulted in more costly care for US patients or the healthcare system.

The social determinants of health and the limits of healthcare

Half of the study participants reported global health work gave them a better understanding of the broader, underlying factors that contribute to patient health, including the challenges of accessing healthcare. This was reported as either reinforcing participant's prior perspectives on the social determinants of health or as helping participants to recognize the social and political-economic factors related to health both abroad and in the US. One global health physician working in internal medicine responded that their work abroad led to a broader sense of why their patients are "how they are, so it is not just they are uneducated, it is also their father

is an alcoholic and also that they are addicted to pain pills, and also that they are overweight." Here global health work "helps you connect the dots between seemingly unconnected psychosocial things" *(GHP #*3, interview). This participant located this thinking within the social determinants of health more broadly: "Poverty, corruption, gender inequality, lack of education, years of war and the subsequent post-traumatic stress disorder that affects an entire nation all are the biggest influencers of well-being." (*GHP #3,* questionnaire)

Several participants discussed the distinction between healthcare and health, often in the context of doubting the extent to which global health physicians could, themselves, improve health through providing healthcare in the US or abroad. As one participant wrote,

> My experience working abroad has strengthened my belief that 'well-being' (or 'health' as defined by the World Health Organization) is very minimally influenced by the medical care I provide as an individual physician and also minimally influenced by the medical care provided by a healthcare system. (*GHP #3,* questionnaire)

These participants advocated for a more nuanced understanding of the factors that influence health and felt that their global health work either brought them to this realization or reaffirmed their understandings of the social determinants of health.

Rethinking the United States healthcare system

Seven out of the eight interview participants acknowledged the importance of their global health work in helping to better understand the strengths and weaknesses of the US healthcare system. This was attributed to a variety of factors unique to the field of global health, such as conversations with non-US healthcare practitioner counterparts and experience working within non-US healthcare systems, as these two responses reveal: "I have had a lot of conversations with colleagues in Ukraine, because they are undergoing a lot of reform...we have a lot of talks about the kind of differences, weakness in each [Ukraine and US healthcare systems] and what is

similar." (*PL #7,* interview) "Having the experience of working in many different healthcare systems... allows you to see in every variety and every system there are things that work well and things that do not." (*PL #6,* interview) Participants framed these comparisons on the weaknesses of the US healthcare system by discussing the motivations and standard practices of other healthcare systems. As one participant noted during an interview, "The goal of many countries' healthcare system is to serve their citizens fully…They start off in a different place than where we are." (*PL #7*, interview)

Participants also contrasted the cultural role of healthcare in various settings. These discussions were focused on perceived changes or shortcomings in US healthcare practices that negatively affected patient care, as well as physician satisfaction and prestige. One participant noted that they "do not get the experience of saving lives in the US" and "I do not get the same level of gratitude from the patients." (*GHP #3*, interview) This perspective was reiterated by another participant who discussed how they and other physicians "look nostalgically to a time when there was more enthusiasm for the work that physicians did"; though, they "try to keep the dissatisfying thoughts at bay." This was attributed to them spending "a lot of time doing paperwork, less time doing patient interaction or [having] meaningful patient interaction." (*PL #6*, interview) The following participant quote exemplifies how participants framed their perceptions of the US healthcare system. They perceived a decline in the US healthcare system and that global health work was seen as a more personally beneficial and altruistic endeavor: "We do not practice evidence-based medicine anymore [in the US], we practice lawsuit- based and insurance-based medicine now. I am a hired gun here. I collect a paycheck and then go back [abroad]." (*GHP #3*, interview)

Several interview participants identified current and future potential challenges of infectious disease epidemics to the US healthcare system, and the perceived benefits of global health work in primary, secondary, and tertiary prevention. One participant noted, "If we are not prepared to fight that pandemic, like Ebola or Severe Acute Respiratory Syndrome, in the place where it starts then that will eventually come to anybody anywhere in the world." (*PL #6,* interview) Another participant discussed epidemics and the perceived benefits of global health work to infectious disease control: "I see a lot of infections when I'm overseas that then periodically show up here and I think I'm one of the few people that could actually like deal with [it]. So, it informs the technical aspect of my job." (*PL #6*, interview)

One of the primary research questions was whether a greater recognition of the strengths and weakness of the US healthcare system could lead to a culture of change amongst global health physicians in their US sites of practice. The participants responded in a variety of ways – most of which contained elements of doubt, cynicism, disinterest, or a perceived greater ability to support impactful changes to foreign healthcare systems. Discussing their personal experiences with the US healthcare system, one participant noted: "There are so many competing agendas, and it is the big money that is going to win out. I hate to sound cynical." (*PL #7*, interview) Another participant explained that their work providing technical expertise to the Kenyan Health Ministry "can make public health decisions that have a big impact much more easily than anybody here can have." (*PL #6,* interview) Several participants discussed how they had previously been involved in US healthcare advocacy and reform work, but had either lost interest, were too busy with their global health work, or had felt that they were able to bring about more meaningful reforms in non-US healthcare systems: "One of the things is I used to

follow US medical care, a lot, but I can't keep up, just because I try to keep up with things going on overseas...I used to know a lot about this stuff." (*PL #2,* interview)

Values behind interest in global health

All interviewed participants reported that their values were not changed by their global health work, but rather their values drove them to pursue global health in the first place—or allowed them to "find a niche in which to put their values," (*Program Leadership,* interview #2) as one participant noted. Furthermore, five interviewees mentioned that global health was a field that self-selected for individuals with altruistic values: *"*I think that many people who choose to do global health [have] ...stronger altruistic focus or willingness to devote their time." (*Global Health Physician #1*, interview) Several participants mentioned that their values came from their familial upbringing, religious background, or political ideology, and that pursuing careers in global health was a way for them to put their values into practice.

DISCUSSION

This exploratory study contributes to an expanded understanding of the ways in which global health physicians and academic global health program leaders understand their work in relationship to the field of global health, and the perceived impact of this work on the US healthcare system. Our analysis revealed that those who engage in global health work are deeply affected by experiences abroad, and in turn these experiences influence the way they practice medicine back home—even in the face of what participants perceive to be a challenging healthcare ecosystem. This was often described as a contradiction of values between the profit-

driven US healthcare system and the goals of these global health physician to provide high-quality, attentive, culturally sensitive, and patient-centered care.

Study participant responses reflect a shared understanding of the ways in which the US healthcare system treats patients as 'paying customers'—a product of the US fee-for-service and for-profit healthcare model[36]—in comparison to the non-profit, universal, or single payer models of healthcare delivery experienced by global health physician participants while abroad. Participants said that the US healthcare system manifests in problematic physician-patient relationships, too much time devoted to bureaucratic requirements, excessive fear of litigation, frivolous spending, overly aggressive medical care, and a disconnect between care providers and the lived experiences of low-income and immigrant patients, all perspectives noted in other studies[35 37-39].

Participants report that their personal values motivate them to pursue global health careers, a notion supported by studies on career choice selection[40] and short-term temporary global health residency electives[29]. They describe global health work as personally rewarding, a counterweight to personal frustrations resulting from the US healthcare system. Several participants explicitly state that global health work is a return to their altruistic values, an opportunity to "save lives," or to serve regardless of cost. In contrast, they describe practicing in the US as prioritizing pleasing the patients and the 'worried well' (as opposed to healing people, and understanding the broader roots of affliction), practicing "insurance medicine" or "liability medicine", or "customer service". They attribute these perceptions to either the volunteer nature of their global health work, their experiences working in non-US healthcare systems, or witnessing different provider-patient relationships while abroad.

While a broader discussion of the promise and perils of short-term global health and medical mission work—of which academic global health programs are just one example—is outside the scope of this study, it is worth reflecting briefly on some of these comments, which point to the problematic nature of many of these programs. The idea of escaping from the confines of the bureaucratic US healthcare system into a LMIC medical setting can often propel well-intending physicians into potentially ethically problematic global health situations. They may be operating outside of the laws of the 'host' country, and be unfamiliar with the structural determinants of health in this new setting; and, as a result their work might undermine local healthcare delivery systems. These are situations we have seen in our collective global health work, and about which several participants spoke during interviews.

The most significant division amongst participants is whether they viewed their global health work as a vehicle for change on individual care, and/or systemic changes in the US. Those that did report positive benefits of global health for improved patient-care and the changes to the US healthcare system overall discuss these more at the individual level—such as reduced spending, better patient care, and replicating interventions that had proven effective abroad. These findings are supported by similar research looking at the perspectives of short-term global health residency electives[29], international clinical rotations[41], and other forms of global health engagement[42]. Additionally, several participants point to the role of global health physicians in preventing pandemics by being better prepared at recognizing new infectious diseases, going to the source of the outbreak, and identifying the need for the US healthcare system to take infectious disease threats more seriously.

A majority of participants reported having a better understanding of the weaknesses and strengths of the US healthcare system as a result of their global health work. Other studies argue

that global health experiences can serve the needs of the healthcare system by increasing the number of physicians who go into a primary care field and practice medicine in resource-poor settings[41].

Participants who consider the impact of global health work on US patient care point to US national policies and the social determinants of health as being important for improving patient health. These narratives are supported by evidence that points to income and other economic inequalities as important drivers of poor population health,[43] and the realization that, while the US spends more money on healthcare than the rest of the world combined,[44] it continues to lag behind other high-income countries in life expectancy.[13] These participants suggest the need for domestic and foreign collective reforms to bring about significant health improvements.

Our study found that global health physicians and global health program leaders do not feel greater agency to bring about policy or systems-level changes to the US healthcare system because of their global health experiences. This could be the result of a multitude of factors, such as an increased awareness to the obstacles that stand in the way of reform, a recognition of the immensity of reform required, or an understanding of the difficulty of bringing about positive changes in the current political context.

Limitations

The homogeneity of the research team is a notable limitation of this study, with lead researchers all from North America and predominantly white men, thus affecting the formulation of the research questions, the data received, and the analysis conducted. We reached out to 159 individuals and programs, 30 opened the questionnaire link, and only 12 completed the

questionnaire (7.5% response rate). The study's small sample size was most likely a result of physician and program leadership survey fatigue—which, the research team was told directly by several who declined to participate—limiting the generalizability of our findings. Future qualitative research on this or similar participant demographics should consider survey fatigue and explore ways to increase response rates, such as more in-person interviews and, if ethically feasible, participant observation. A more grounded research design that develops interview guides based on initial questionnaire responses will likely improve the scope and focus of participant responses, as well. While thematic saturation was not achieved, we hope that our identified themes can act as a starting point for future research on the topic of how global health work is perceived to impact US patient care. One example might be an experimental study investigating global health physician spending patterns compared to physicians who have not practiced abroad. We also feel that future research seeking to understand the growing interest in the global health field could investigate how perceived conflict of values between altruistically-driven physicians and the US healthcare system could act as a potential force in generating more interest in global health, and how the US healthcare system or individual institutions could decrease physician discontentment associated with a conflict of care values.

CONCLUSIONS

This exploratory qualitative study only begins to scratch the surface of understanding the impact of global health work on US patient care and the US healthcare system. Among the five themes identified through questionnaires and interviews with global health physicians and global health program leaders, two themes were centered on the impact of global health work on US patient care: global health may improve patient rapport for physicians caring for immigrant and

low socioeconomic patients, may reduce healthcare spending by providers, and may lead to more effective patient care. The other three identified themes were that global health work is largely motivated by altruistic values, leads to a greater awareness of the social determinants of health, and gives rise to a better understanding of the strengths and weaknesses of the US healthcare system. Participants saw these themes as inter-related, such as how global health work allows for more personally rewarding physician–patient interactions compared to the US healthcare system, which was viewed as flawed, unwieldy, and obdurate, and in need of reform.

STATEMENTS

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Competing interests
NMT is a student at, DC and SB are faculty members at, and DC and SH are employed part-time at a public university (University of Washington). DC and SH are employed by, and BA, SM, and DM work in partnership with a nonprofit healthcare company (Possible) that delivers free healthcare in rural Nepal using funds from the Government of Nepal and other public, philanthropic, and private foundation sources. BA is a faculty member at a public university (University of California, San Francisco). SM and DM are faculty members at a private university (Icahn School of Medicine at Mount Sinai). DM is a non-voting member on *Possible*'s board of directors but receives no compensation. All authors have read and understood BMJ Open's policy on competing interests and declare that we have no competing financial interests. The authors do, however, believe strongly that healthcare is a public good, not a private commodity.

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Conceived and designed the study: NMT, DC, SH, SB, DM
Collected and analyzed the data: NMT
Interpreted the results: NMT, DC, SH, BA, SM, SB, DM
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Edited and revised the manuscript draft: NMT, DC, SH, BA, SM, SB, DM
Reviewed and approved the final manuscript draft: NMT, DC, SH, BA, SM, SB, DM

Data sharing statement:
The datasets supporting the conclusions of the article are available in de-identified form by emailing: research@possiblehealth.org.

Ethics approval and consent to participate
This study received exemption through the Human Subjects Division, University of Washington's Ethical Review Board (00000104) and the Brigham and Women's Hospital Institutional Review Board (2016P000365/BWH). Participants were informed of the study objectives using an electronic information sheet as part of the initial questionnaire and electronic online consent was obtained before beginning any research procedures. Participants who were invited for interviews also gave additional verbal or written informed consent.

Consent for publication
No applicable.

Supplemental Materials

Supplemental File 1: Interview Guide

REFERENCES

1. Nelson BD, Kasper J, Hibberd PL, Thea DM, Herlihy JM. Developing a Career in Global Health: Considerations for Physicians-in-Training and Academic Mentors. *Journal of Graduate Medical Education* 2012;**4**(3):301-06 doi: 10.4300/JGME-D-11-00299.1.
2. Crane J. Scrambling for Africa? Universities and global health. *The Lancet*;**377**(9775):1388-90 doi: http://dx.doi.org/10.1016/S0140-6736(10)61920-4.
3. Federico SG, Zachar PA, Oravec CM, Mandler T, Goldson E, Brown J. A successful international child health elective: The university of colorado department of pediatrics' experience. *Archives of Pediatrics & Adolescent Medicine* 2006;**160**(2):191-96 doi: 10.1001/archpedi.160.2.191.
4. Hamel L, Kirzinger A, Brodie M. The Henry M. Kaiser Family Foundation. *2016 Survey of Americans on the U.S. Role in Global Health.* 2016. https://www.kff.org/global-health-policy/poll-finding/2016-survey-of-americans-on-the-u-s-role-in-global-health/.
5. Crane JT. *Scrambling for Africa : AIDS, expertise, and the rise of American global health science*. Ithaca: Ithaca : Cornell University Press, 2013.
6. Lasker J. *Hoping to help : the promises and pitfalls of global health volunteering*. Ithaca: Ithaca : ILR Press, an imprint of Cornell University Press, 2016.
7. Crump JA, Sugarman J. Ethical considerations for short-term experiences by trainees in global health. *JAMA* 2008;**300**(12):1456-58 doi: 10.1001/jama.300.12.1456.
8. Kanter SL. Global Health is More Important in a Smaller World. *Acad Med* 2008;**83**(2):115-16 doi: 10.1097/01.acm.0000305155.66318.58.
9. Association of American Medical Colleges. *Matriculating Student Questionnaire: 2016 All Schools Summary Report.* 2016. https://www.aamc.org/download/474258/data/msq2016report.pdf.
10. McCoy D, Mwansambo C, Costello A, Khan A. Academic partnerships between rich and poor countries. *Lancet* 2008;**371** doi: 10.1016/s0140-6736(08)60466-3.
11. Kerry VB, Walensky RP, Tsai AC, Bergmark RW, Bergmark BA, Rouse C. US medical specialty global health training and the global burden of disease. *Journal of global health* 2013;**3** doi: 10.7189/jogh.03.020406.
12. Bezruchka S. Medical tourism as medical harm to the third world: Why? For whom? *Wilderness Environ Med* 2000;**11** doi: 10.1580/1080-6032(2000)011[0077:mtamht]2.3.co;2.
13. Council NR. *Explaining Divergent Levels of Longevity in High-Income Countries*. Washington, DC: The National Academies Press, 2011.
14. Hart G, Skillman S, Fordyce M, Thompson M, Hagopian A, Konrad T. International Medical Graduate Physicians In The United States: Changes Since 1981. *Health Aff* 2007;**26**(4):1159-69 doi: 10.1377/hlthaff.26.4.1159.
15. Mills EJ, Schabas WA, Volmink J, et al. Should active recruitment of health workers from sub-Saharan Africa be viewed as a crime? *The Lancet* 2008;**371**(9613):685-88 doi: https://doi.org/10.1016/S0140-6736(08)60308-6.
16. Hagopian A. Recruiting Primary Care Physicians From Abroad: Is Poaching From Low-Income Countries Morally Defensible? *The Annals of Family Medicine* 2007;**5**(6):483-85 doi: 10.1370/afm.787.
17. Loiseau B, Sibbald R, Raman SA, Benedict D, Dimaras H, Loh LC. 'Don't make my people beggars': a developing world house of cards. *Community Development Journal* 2016;**51**(4):571-84 doi: 10.1093/cdj/bsv047.

18. Green T, Green H, Scandlyn J, Kestler A. Perceptions of short-term medical volunteer work: a qualitative study in Guatemala. *Global Health* 2009;**5**(1):4 doi: 10.1186/1744-8603-5-4.
19. Shah S, Wu T. The medical student global health experience: professionalism and ethical implications. *J Med Ethics* 2008;**34** doi: 10.1136/jme.2006.019265.
20. Wendland CL. Moral Maps and Medical Imaginaries: Clinical Tourism at Malawi's College of Medicine. *American Anthropologist* 2012;**114**(1):108-22 doi: 10.1111/j.1548-1433.2011.01400.x.
21. Redko C, Bessong P, Burt D, et al. Exploring the Significance of Bidirectional Learning for Global Health Education. *Annals of Global Health* 2016;**82**(6):955-63 doi: https://doi.org/10.1016/j.aogh.2016.11.008.
22. Lough BL, Matthew L. International Forum for Volunteering in Development. *Forum Discussion Paper 2013: Measuring and Conveying the Added Value of International Volunteering.* 2013. http://forum-ids.org/2013/12/forum-discussion-paper-2013-measuring-and-conveying-added-value/#exec_summary.
23. Citrin D. The Anatomy of Ephemeral Healthcare: "Health Camps" and Short-Term Medical Voluntourism in Remote Nepal. *Studies in Nepali History and Society* 2010;**15**(1):27-72.
24. Grennan T. A Wolf in Sheep's Clothing? A Closer Look at Medical Tourism. *McMaster University Medical Journal* 2003;**1**(1):50-54.
25. Hunt MR, Godard B. Beyond procedural ethics: Foregrounding questions of justice in global health research ethics training for students. *Glob Public Health* 2013;**8**(6):713-24 doi: 10.1080/17441692.2013.796400.
26. Banatvala N, Doyal L. Knowing when to say "no" on the student elective. *Students going on electives abroad need clinical guidelines* 1998;**316**(7142):1404-05 doi: 10.1136/bmj.316.7142.1404.
27. 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** doi: 10.4269/ajtmh.2010.09-0692.
28. Smith JK, Weaver DB. Capturing Medical Students' Idealism. *Annals of Family Medicine* 2006;**4**:S32-S37 doi: 10.1370/afm.543.
29. Gupta AR, Wells CK, Horwitz RI, Bia FJ, Barry M. The International Health Program: the fifteen-year experience with Yale University's Internal Medicine Residency Program. *The American Journal of Tropical Medicine and Hygiene* 1999;**61**(6):1019-23 doi: doi:https://doi.org/10.4269/ajtmh.1999.61.1019.
30. World Development Indicators: World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators.
31. Koplan JP, Bond TC, Merson MH, et al. Towards a common definition of global health. *The Lancet* 2009;**373**(9679):1993-95 doi: https://doi.org/10.1016/S0140-6736(09)60332-9.
32. Beaglehole R, Bonita R. What is global health? *Global Health Action* 2010;**3**(1):5142 doi: 10.3402/gha.v3i0.5142.
33. DiCicco-Bloom B, Crabtree BF. The qualitative research interview. *Med Ed* 2006;**40**(4):314-21 doi: 10.1111/j.1365-2929.2006.02418.x.
34. Pope C, Ziebland S, Mays N. Analysing qualitative data. *Bmj* 2000;**320**(7227):114.
35. Lateef F. Patient expectations and the paradigm shift of care in emergency medicine. *Journal of Emergencies, Trauma, and Shock* 2011;**4**(2):163-67 doi: 10.4103/0974-2700.82199.
36. Brock DW, Buchanan A. For-Profit Enterprise in Health Care. In: Gray B, ed. Washington, DC: The National Academies Press, 1986:580.

37. Staiger DO, Auerbach DI, Buerhaus PI. Health Care Reform and the Health Care Workforce — The Massachusetts Experience. *New England Journal of Medicine* 2011;**365**(12):e24 doi: 10.1056/NEJMp1106616.
38. Sinsky C, Colligan L, Li L, et al. Allocation of physician time in ambulatory practice: A time and motion study in 4 specialties. *Annals of internal medicine* 2016;**165**(11):753-60 doi: 10.7326/M16-0961.
39. Bentley TGK, Effros RM, Palar K, Keeler EB. Waste in the U.S. Health Care System: A Conceptual Framework. *Milbank Quarterly* 2008;**86**(4):629-59 doi: 10.1111/j.1468-0009.2008.00537.x.
40. Ledley FD, Lovejoy FH. Factors Influencing the Interests, Career Paths, and Research Activities of Recent Graduates From an Academic, Pediatric Residency Program. *Pediatrics* 1993;**92**(3):436.
41. 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** doi: 10.1097/ACM.0b013e3180305cf9.
42. Ruchman SG, Singh P, Stapleton A. Why US Health Care Should Think Globally. *AMA journal of ethics* 2016;**18**(7):736-42 doi: 10.1001/journalofethics.2016.18.7.msoc1-1607.
43. Bezruchka S. The Hurrider I Go the Behinder I Get: The Deteriorating International Ranking of U.S. Health Status. *Annual review of public health* 2012;**33**(1):157-73 doi: 10.1146/annurev-publhealth-031811-124649.
44. Avendano M, Kawachi I. Invited Commentary: The Search for Explanations of the American Health Disadvantage Relative to the English. *American Journal of Epidemiology* 2011;**173**(8):866-69 doi: 10.1093/aje/kwq484.

Global Health Physician (GHP) Study – Interview Guide

Summarize before starting the interview: research topic, inform time required for interview, ask for permission to record.

Our informal discussion/interview will last between 30-60 minutes. We've drafted some questions to help guide this semi-structured interview, but are also interested in your own thoughts, reflections, and experiences about global health physician practice.

1. Tell me about a little about your Clinical and/or Research work abroad.

2. Over _____ years working abroad, how has your perspective changed?

3. I know you've worked in quite a few different countries, including _____. How do you reflect on these experiences?

3. You mentioned in your survey that your global health work has influenced your perspective by _____.*

If participant doesn't answer above with specific events: "Are there any anecdotes, experiences, or people that influenced your perspective?"*

4. What was it about the nature of your work, or the location in which you worked that influenced this perspective?

5. How does, if at all, your global health work inform your perspective on the US healthcare system?

6. The field of global health is rapidly growing; what are your thoughts on this phenomenon?

7. Do you feel an agency to bring about change? If so, how, where, and to what extent?

8. Of your colleagues, students, or program associates who also work abroad, how have they been changed by their experiences? Do you talk about these changes?

9. How are physicians who work abroad different than physicians who do not? In regards to personal values or how they practice medicine?

10. How important do you think the values and perspectives of physicians are before they work abroad in shaping their global health experiences?

11. Is there anything further you'd like to tell or reflect on, or you feel is worth asking other global health physicians or those who work in the field about?

Table 1
Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist

No	Item	Guide questions/description	Location in Manuscript
Domain 1: Research team and reflexivity			
Personal Characteristics			
1.	Interviewer/facilitator	NMT administered questionnaire and conducted interviews	
2.	Credentials	MPH-candidate	
3.	Occupation	Student	
4.	Gender	Male	
5.	Experience and training	Graduate-level qualitative methods training	
Relationship with participants			
6.	Relationship established	No	
7.	Participant knowledge of the interviewer	Participants were briefed during online informed consent process about the study purpose, recruitment and study procedures.	Methods/pg 7
8.	Interviewer characteristics	Research team members' positionality described and contextualized.	Discussion/pg 18
Domain 2: study design			
Theoretical framework			
9.	Methodological orientation and Theory	Open coding with thematic content analysis	Methods/pg 6
Participant selection			
10.	Sampling	Convenience and snowball sampling	Methods/pg 5
11.	Method of approach	Prospective participants identified through internet search of global health programs associated with academic medical centers. Individuals were then contacted via email.	Methods/pg 5
12.	Sample size	18	Results/pg7-8
13.	Non-participation	159 recruitment emails sent with	Results/pg7-8

		7.5% response rate. Of 12 participants completing questionnaire, 4 completed interview. 6 additional interview participants identified via snowball sampling. For the participants who completed the questionnaire but not the interview, no reason was given but survey fatigue suspected.	
Setting			
14.	Setting of data collection	Data collected remotely via online questionnaire and phone interview.	
15.	Presence of non-participants	No	
16.	Description of sample	1. US-trained, post-residency physicians participating in a global health program based in a World Bank defined low- or middle-income country; 2. US-trained physicians currently providing patient care and/or conducting healthcare research or mentorship (including education) for at least one month out of the year in a low- or middle-income country, and who are affiliated with an established global health program supported by an academic medical center; and 3. US-trained physicians who have at least a cumulative of five years of global health experiences in a low- or middle-income country.	Methods/pg 5
Data collection			
17.	Interview guide	Questionnaires and interview questions were not provided to participants in advance. General questionnaire and interview content was included in the informed consent process. Both questionnaire and interview guide were pilot-tested. Each interview was adapted to explore participant's expertise, positionality, and questionnaire responses.	Methods/pg

18.	Repeat interviews	Repeat interviews were not carried out, but follow-up questions were posed to some participants via email to clarify interview responses.	
19.	Audio/visual recording	Interviews were audio recorded.	Methods/pg 6
20.	Field notes	Field notes were taken during interviews.	Methods/pg 6
21.	Duration	Interviews lasted between 30-60minutes.	
22.	Data saturation	Thematic saturation was discussed during the ongoing data analysis process. Thematic saturation was not reached nor were ongoing interviews withheld due to thematic saturation.	
23.	Transcripts returned	No, interview transcripts were not returned to participants for clarity.	
Domain 3: analysis and findings			
Data analysis			
24.	Number of data coders	1 coder, NMT.	
25.	Description of the coding tree	A coding tree was not used during analysis.	
26.	Derivation of themes	Preliminary themes were identified during literature review and used to construct categories for questionnaires. Themes for interview probes were identified based on participant questionnaire responses. Thematic analysis was used to identify other emergent themes, presented in results.	
27.	Software	No.	
28.	Participant checking	No.	
Reporting			
29.	Quotations presented	Yes.	Results/pg 9-15
30.	Data and findings consistent	Yes	Results/pg 8
31.	Clarity of major themes	Yes, see Table 1.	Methods/pg 8
32.	Clarity of minor themes	Only major emergent themes are discussed	

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Understanding perceptions of global healthcare experiences on provider values and practices in the United States: A qualitative study among global health physicians and program directors

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ABSTRACT

Objectives

The study aimed to qualitatively examine the perspectives of United States-based physicians and academic global health program leaders on how global health work shapes their viewpoints, values, and healthcare practices back in the United States.

Design

A prospective, qualitative exploratory study that employed online questionnaires and open-ended, semi-structured interviews with two participant groups: (1) global health physicians and (2) global health program leaders affiliated with United States-based academic medical centers. Open coding procedures and thematic content analysis were used to analyze data and derive themes for discussion.

Participants

159 global health physicians and global health program leaders at 25 academic medical institutions were invited via email to take a survey and participate in a follow-up interview. Twelve participants completed online questionnaires (7.5% response rate) and eight participants (four survey participants and four additionally recruited participants) participated in in-depth, in-person or phone semi-structured interviews.

Results

Five themes emerged that highlight how global health physicians and academic global health program leaders perceive global health work abroad in shaping United States-based

medical practices: 1) a sense of improved patient rapport, particularly with low-income, refugee, and immigrant patients, and improved and more engaged patient care; 2) reduced spending on healthcare services; 3) greater awareness of the social determinants of health; 4) deeper understanding of the United States healthcare system compared to systems in other countries; and 5) a reinforcement of values that initially motivated physicians to pursue work in global health.

Conclusions

A majority of participating global health physicians and program leaders believed that international engagements improved patient care back in the United States. Participant responses relating to the five themes were contextualized by highlighting factors that simultaneously impinge upon their ability to provide improved patient care, such as the social determinants of health, and the challenges of changing United States healthcare policy.

ARTICLE SUMMARY

Strengths and limitations of this study

- Online questionnaires along with key informant interviews allowed for a more in-depth examination of physician and program leader perspectives.
- Thematic analysis resulted in five nuanced themes that contributes to an expanded understanding of how global health work shapes a culture of healthcare practice back home in the US; offering further points for research and exploration.

- Thematic saturation was not achieved through data analysis, as low questionnaire response rate and a small number of interview participants limit the generalizability of research findings.

BACKGROUND

Interest in the field of global health has been rapidly growing over the last decade,[1-3] as has United States' (US) support for international efforts aimed at improving health in low- and middle-income countries.[4] As a result, many academic medical institutions and organizations have stepped up to meet this demand, offering more opportunities to study, work, and conduct research in the field of global health.[5-8] As of 2016, more than one-third of all matriculated US medical students reported volunteering internationally.[9] To offer medical students opportunities in global health, academic medical institutions establish partnerships with collaborators in low- and middle-income countries (LMICs), both public and private, in a range of settings.[10] These relationships vary by program and school, with the majority providing short-term (typically no more than two months) training or service learning opportunities, such as global health clinical rotations for medical students and residents, direct service delivery engagements, research opportunities in the health sciences, and diverse training collaborations.[11] Some question the ethics of these engagements as forms of "medical tourism", considering the population health status in the US pales in comparison to other high-income nations[12 13] and because a growing number of foreign- born and foreign-trained physicians immigrate to the US to practice medicine in underserved communities.[14] This healthcare workforce exchange may harm healthcare systems,[15 16] and displace financial resources.[17]

With the proliferation of academic global health programs has come a growing body of research and literature examining the ethics, achievements, and potential unintended consequences of these programs on non-US communities,[2 18-24] as well as how these engagements influence the values and perspectives of global health students,[25] medical

students,[26-28] or residents.[29] But a gap remains in understanding how global health work influences the values and practices of US-based physicians who have worked extensively, and/or those who continue to work intermittently, in a global health setting, and what impacts this work is perceived to have on the US communities in which these physicians return to work and live. This qualitative study attempts to understand the perspectives of global health physicians and program leaders in academic global health on how they believe their work abroad influences their viewpoints, values, and healthcare practices back home in the US.

METHODS

Participant and data collection

We recruited participants from two groups: global health physicians and global health program leaders affiliated with academic medical institutions. We developed inclusion criteria to purposively reflect diverse perspectives based on duration of global health experience and positionalities within academic global health programs. We initially used convenience sampling to recruit participants for the online questionnaire by first identifying academic medical institutions with accredited—by the Council on Education for Public Health (CEPH) or Liaison Committee on Medical Education (LCME)—global health programs through structured online searches, followed by snowball sampling through colleague recommendations and purposeful sampling to recruit additional interviewees. The study recruitment for the global health physician category required participants to match with the following criteria:

1. US-trained post-residency physicians currently providing patient care and/or conducting healthcare research, training, or mentorship (including education) for at least one month

out of the year in a World Bank[30] defined low- or middle-income country and who are either:

a. affiliated with an accredited global health program supported by an academic medical center, or

b. engaged in their work through another organization or company (e.g. an international/non-governmental organization, consulting/technical assistance organization, or multi/bi-lateral development agency).

2. US-trained physicians who have at least five-years of cumulative global health experience in a low- or middle-income country.

The study recruitment criteria for global health program leadership required that participants be program faculty or staff (program coordinators, administrators, and mentors) affiliated with an academic medical institution offering an accredited global health program. Several selected participants fit the criteria for both global health physician and global health program leadership, and their responses were analyzed within both categories.

We designed the questionnaire and survey questions to elicit open-ended responses about global health physicians' personal experiences researching and practicing abroad, while program leaders were asked questions regarding their experiences overseeing programs and their perspectives on the field more broadly (see Supplemental File 1). Participants who fell into both categories were asked questions from both instruments. Recognizing the ambiguity of key terminology such as global health,[31 32] we shared with participants the study's focus on healthcare practices in a global context prior to recruitment. The research instruments consisted of an online questionnaire developed and administered using a Research Electronic Data Capture

database, comprised of open-ended questions and short response questions identifying demographic information.

We utilized an adaptive approach to designing the semi-structured interviews[33] by personalizing questions to further explore participant's expertise, positionality, and questionnaire responses. Interviews were recorded, relevant portions were transcribed with structured notes, and then coded (by NMT) and analyzed by hand using thematic analysis (conducted by NMT, DC, SH, and SB) in relation to identified questionnaire themes.[34] We have incorporated researcher comments—distinguished by bracketed text within direct quotations—to provide clarity to the quote based on information and context provided from the full interview. In the text below, the names of all participants remain anonymous, and are cited using a notational system to differentiate between global health physician and program leadership participant groups, and if the quote comes from an interview or questionnaire; for example, (*Global Health Physician* #1, *interview* [GHP, hereafter]), or *Program Leadership #3,* questionnaire [PL, hereafter]).

Ethics, consent, and permissions

This study received exemption through the Human Subjects Division, University of Washington's Ethical Review Board (00000104) and the Brigham and Women's Hospital Institutional Review Board (2016P000365/BWH). Participants were informed of the study objectives using an electronic information sheet as part of the initial questionnaire and electronic online consent was obtained before beginning any research procedures. Participants who were invited for interviews also gave additional verbal or written informed consent.

Patient and public involvement

Neither patients nor the general public were directly involved in the study design, data collection, or analysis. The underlying research question was informed by a gap in the literature on understanding the impact that global health physicians have on domestic healthcare practices in the US. We hope that these results will inform future research designs that explore these themes in-depth, and connect them with patient-centered outcomes research and other forms of community-based participatory research. We plan to pursue further dissemination of the results to the public and will consider strategies to engage the public.

RESULTS

We sent 159 recruitment emails to global health physicians and global health program leaders at 25 different academic medical institutions. Eight global health physicians and four global health program leaders completed the online questionnaire, while one global health physician and three global health program leaders who completed the questionnaire agreed to participate in a semi-structured interview. In addition, we conducted semi-structured interviews with six global health physicians and two global health program leaders who were identified through snowball and purposeful sampling. In total, participants represented seven unique academic medical institutions located throughout the US and ranged from 33 to 68 years of age. Four participants reported beginning their global health work in the 2000s, two reported beginning in the 1990s, and one each reported beginning in the 1980s and 1970s. We were unable to identify differences between program leaders and global health physician responses, likely a result of several participants falling into both categories, and similar motivations for participants in each category. We present in Table 1 the domains of engagement in global health

for these participants and the emergent themes identified through analysis of the qualitative data in Table 2.

Table 1. Global health domains of engagement among participants

Participants	Category of work abroad
PL1	Care delivery, research, teaching/training, policy/advocacy, program design/monitoring/evaluation
PL2	Research, teaching/training, program design/monitoring/evaluation
PL3	Research, teaching/training, program design/monitoring/evaluation
PL4	Research, program design/monitoring/evaluation
PH1	Research, teaching/training, program design/monitoring/evaluation
PH2	Research, teaching/training, policy/advocacy, program design/monitoring/evaluation
PH3	Care delivery, teaching/training, program design/monitoring/evaluation
PH4	Care delivery, teaching/training
PH5	Care delivery, teaching/training, policy/advocacy
PH6	Care delivery, research, teaching/training
PH7	Care delivery, research, teaching/training, policy/advocacy, program design/monitoring/evaluation
PH8	Research, teaching/training, policy/advocacy, program design/monitoring/evaluation

Table 2. Themes: Perceptions of how global health work influences patient care in the US

Themes	Descriptors
Improved and more engaged patient rapport & patient care	Connection through language, cultural familiarity, better understanding of patient challenges, patient-centered care, and less aggressive treatment.
Reduced healthcare spending	More attention to patient history, increased reliance on physical exams, and greater awareness to a culture of frivolous testing.
Greater awareness to the social determinants of health and the limits of healthcare	"Connecting the dots", understanding social determinants of health, recognizing similarities between healthcare access between US patients and patients abroad.
Rethinking the US healthcare system	A more nuanced understanding of the US healthcare system through comparison with healthcare systems in other countries.
Values behind interest in global health	Global health attracts altruistically motivated individuals. Personal values were developed prior to global health work.

Improved and more engaged patient rapport & patient care

All eight of the interviewed participants indicated that their global health work had improved their ability to build rapport with and provide care for immigrant, refugee, and low-

income individuals in the US. They attributed perceived improved patient rapport to a variety of reasons, such as being able to speak to patients in their own language, understand their cultural background, and better understand the challenges unique to immigrant, refugee, and patients of low socioeconomic position. As one participant noted, "If I bring some of these things up, then I break a barrier and have a good relationship very quickly." (*GHP #1*, interview) Another participant discussed similar experiences that have helped them build rapport in the emergency department where they work: "I speak a couple languages which working abroad has taught me. I speak Spanish, I speak Creole, so…[with some patients] there is that automatic connection." (*GHP #3*, interview) Several participants remarked during interviews and in questionnaire responses that patient rapport is vital to the work of caring for patients, and that learning to speak another language was a direct result of their global health work.

Half of participants reported that their global health work improved the quality of care they were able provide to their patients back home. Participants reported this as being "more efficient" as a result of taking better patient histories and physical exams, that they were less inclined to carry out "unnecessary and invasive tests," or being more patient-centered[35] as they had a greater awareness to patient's economic and/or cultural context. One participant reported that they were "more likely to speak to a patient about options that did not include very aggressive care," and that they may be "a little more comfortable" offering to "do nothing." (*PL #6*, interview) The following participant quote also exemplifies this theme:

> Each time I practice abroad and then come back to the US, I find that I am more compassionate and empathetic, because I have been practicing how to focus on the person in front of me while I was away, and to think clinically (instead of focusing on the computer and the paperwork. (*GHP #4*, questionnaire)

Several participants doubted whether these improvements in patient care were significant and questioned whether they could be accurately measured. “I don't feel that physician experience abroad translates into worsened quality of patient care in the U.S. I can't assume that it translates into improved quality of patient care in the U.S either.” (*GHP #3*, questionnaire)

Reduced healthcare spending

The interviewees and questionnaire participants were divided on the extent to which their global health work experience translated into cost savings for US patients. The majority, however, reported that learning to practice medicine with fewer resources translated into more reliance on patient histories, physical exams, and less on medical tests. Several also reported a greater awareness of patterns of over-spending in the US healthcare system as one family physician wrote:

> I have been able to think more clinically and utilize my medical knowledge in a way that I cannot always do in the US. With limited resources, the physical exam and limited testing becomes critical in diagnosis and following up patient responses to treatment. When I return, I find that I do not need to rely on the technology as much and can focus on the patient. (*GHP #4,* questionnaire)

Participants who did not think that their global health work resulted in cost savings for US patients expressed that they believed the differences in cost savings to be negligible. No participants reported feeling that global health work resulted in more costly care for US patients or the healthcare system.

The social determinants of health and the limits of healthcare

Half of the study participants reported global health work gave them a better understanding of the broader, underlying factors that contribute to patient health, including the

challenges of accessing healthcare. This was reported as either reinforcing participant's prior perspectives on the social determinants of health or as helping participants to recognize the social and political-economic factors related to health both abroad and in the US. One global health physician working in internal medicine responded that their work abroad led to a broader sense of why their patients are "how they are, so it is not just they are uneducated, it is also their father is an alcoholic and also that they are addicted to pain pills, and also that they are overweight." Here global health work "helps you connect the dots between seemingly unconnected psychosocial things" *(GHP #*3, interview). This participant located this thinking within the social determinants of health more broadly: "Poverty, corruption, gender inequality, lack of education, years of war and the subsequent post-traumatic stress disorder that affects an entire nation all are the biggest influencers of well-being." (*GHP #3,* questionnaire)

Several participants discussed the distinction between healthcare and health, often in the context of doubting the extent to which global health physicians could, themselves, improve health through providing healthcare in the US or abroad. As one participant wrote,

> My experience working abroad has strengthened my belief that 'well-being' (or 'health' as defined by the World Health Organization) is very minimally influenced by the medical care I provide as an individual physician and also minimally influenced by the medical care provided by a healthcare system. (*GHP #3,* questionnaire)

These participants advocated for a more nuanced understanding of the factors that influence health and felt that their global health work either brought them to this realization or reaffirmed their understandings of the social determinants of health.

Rethinking the United States healthcare system

Seven out of the eight interview participants acknowledged the importance of their global health work in helping to better understand the strengths and weaknesses of the US healthcare

system. This was attributed to a variety of factors unique to the field of global health, such as conversations with non-US healthcare practitioner counterparts and experience working within non-US healthcare systems, as these two responses reveal: "I have had a lot of conversations with colleagues in Ukraine, because they are undergoing a lot of reform...we have a lot of talks about the kind of differences, weakness in each [Ukraine and US healthcare systems] and what is similar." (*PL #7,* interview) "Having the experience of working in many different healthcare systems... allows you to see in every variety and every system there are things that work well and things that do not." (*PL #6,* interview) Participants framed these comparisons on the weaknesses of the US healthcare system by discussing the motivations and standard practices of other healthcare systems. As one participant noted during an interview, "The goal of many countries' healthcare system is to serve their citizens fully…They start off in a different place than where we are." (*PL #7*, interview)

Participants also contrasted the cultural role of healthcare in various settings. These discussions were focused on perceived changes or shortcomings in US healthcare practices that negatively affected patient care, as well as physician satisfaction and prestige. One participant noted that they "do not get the experience of saving lives in the US" and "I do not get the same level of gratitude from the patients." (*GHP #3*, interview) This perspective was reiterated by another participant who discussed how they and other physicians "look nostalgically to a time when there was more enthusiasm for the work that physicians did"; though, they "try to keep the dissatisfying thoughts at bay." This was attributed to them spending "a lot of time doing paperwork, less time doing patient interaction or [having] meaningful patient interaction." (*PL #6*, interview) The following participant quote exemplifies how participants framed their

perceptions of the US healthcare system. They perceived a decline in the US healthcare system and that global health work was seen as a more personally beneficial and altruistic endeavor: "We do not practice evidence-based medicine anymore [in the US], we practice lawsuit- based and insurance-based medicine now. I am a hired gun here. I collect a paycheck and then go back [abroad]." (*GHP #3*, interview)

Several interview participants identified current and future potential challenges of infectious disease epidemics to the US healthcare system, and the perceived benefits of global health work in primary, secondary, and tertiary prevention. One participant noted, "If we are not prepared to fight that pandemic, like Ebola or Severe Acute Respiratory Syndrome, in the place where it starts then that will eventually come to anybody anywhere in the world." (*PL #6,* interview) Another participant discussed epidemics and the perceived benefits of global health work to infectious disease control: "I see a lot of infections when I'm overseas that then periodically show up here and I think I'm one of the few people that could actually like deal with [it]. So, it informs the technical aspect of my job." (*PL #6*, interview)

One of the primary research questions was whether a greater recognition of the strengths and weakness of the US healthcare system could lead to a culture of change amongst global health physicians in their US sites of practice. The participants responded in a variety of ways – most of which contained elements of doubt, cynicism, disinterest, or a perceived greater ability to support impactful changes to foreign healthcare systems. Discussing their personal experiences with the US healthcare system, one participant noted: "There are so many competing agendas, and it is the big money that is going to win out. I hate to sound cynical." (*PL #7*, interview) Another participant explained that their work providing technical expertise to the Kenyan Health Ministry "can make public health decisions that have a big impact much more

easily than anybody here can have." (*PL #6,* interview) Several participants discussed how they had previously been involved in US healthcare advocacy and reform work, but had either lost interest, were too busy with their global health work, or had felt that they were able to bring about more meaningful reforms in non-US healthcare systems: "One of the things is I used to follow US medical care, a lot, but I can't keep up, just because I try to keep up with things going on overseas...I used to know a lot about this stuff." (*PL #2,* interview)

Values behind interest in global health

All interviewed participants reported that their values were not changed by their global health work, but rather their values drove them to pursue global health in the first place—or allowed them to "find a niche in which to put their values," (*PL #2,* interview) as one participant noted. Furthermore, five interviewees mentioned that global health was a field that self-selected for individuals with altruistic values: *"*I think that many people who choose to do global health [have] ...stronger altruistic focus or willingness to devote their time." (*GH #1*, interview) Several participants mentioned that their values came from their familial upbringing, religious background, or political ideology, and that pursuing careers in global health was a way for them to put their values into practice.

DISCUSSION

This exploratory study contributes to an expanded understanding of the ways in which global health physicians and academic global health program leaders understand their work in relationship to the field of global health, and the perceived impact of this work on the US

healthcare system. Our analysis revealed that those who engage in global health work are deeply affected by experiences abroad, and in turn these experiences influence the way they practice medicine back home—even in the face of what participants perceive to be a challenging healthcare ecosystem. This was often described as a contradiction of values between the profit-driven US healthcare system and the goals of these global health physician to provide high-quality, attentive, culturally sensitive, and patient-centered care.

Study participant responses reflect a shared understanding of the ways in which the US healthcare system treats patients as 'paying customers'—a product of the US fee-for-service and for-profit healthcare model[36]—in comparison to the non-profit, universal, or single payer models of healthcare delivery experienced by global health physician participants while abroad. Participants said that the US healthcare system manifests in problematic physician-patient relationships, too much time devoted to bureaucratic requirements, excessive fear of litigation, frivolous spending, overly aggressive medical care, and a disconnect between care providers and the lived experiences of low-income and immigrant patients, all perspectives noted in other studies[35 37-39].

Participants report that their personal values motivate them to pursue global health careers, a notion supported by studies on career choice selection[40] and short-term temporary global health residency electives[29]. They describe global health work as personally rewarding, a counterweight to personal frustrations resulting from the US healthcare system. Several participants explicitly state that global health work is a return to their altruistic values, an opportunity to "save lives," or to serve regardless of cost. In contrast, they describe practicing in the US as prioritizing pleasing the patients and the 'worried well' (as opposed to healing people, and understanding the broader roots of affliction), practicing "insurance medicine" or "liability

medicine", or "customer service". They attribute these perceptions to either the volunteer nature of their global health work, their experiences working in non-US healthcare systems, or witnessing different provider-patient relationships while abroad.

While a broader discussion of the promise and perils of short-term global health and medical mission work—of which academic global health programs are just one example—is outside the scope of this study, it is worth reflecting briefly on some of these comments, which point to the problematic nature of many of these programs. The idea of escaping from the confines of the bureaucratic US healthcare system into a LMIC medical setting can often propel well-intending physicians into potentially ethically problematic global health situations. They may be operating outside of the laws of the 'host' country, and be unfamiliar with the structural determinants of health in this new setting; and, as a result their work might undermine local healthcare delivery systems. These are situations we have seen in our collective global health work, and about which several participants spoke during interviews.

The most significant division amongst participants is whether they viewed their global health work as a vehicle for change on individual care, and/or systemic changes in the US. Those that did report positive benefits of global health for improved patient-care and the changes to the US healthcare system overall discuss these more at the individual level—such as reduced spending, better patient care, and replicating interventions that had proven effective abroad. These findings are supported by similar research looking at the perspectives of short-term global health residency electives[29], international clinical rotations[41], and other forms of global health engagement[42]. Additionally, several participants point to the role of global health physicians in preventing pandemics by being better prepared at recognizing new infectious

diseases, going to the source of the outbreak, and identifying the need for the US healthcare system to take infectious disease threats more seriously.

A majority of participants reported having a better understanding of the weaknesses and strengths of the US healthcare system as a result of their global health work. Other studies argue that global health experiences can serve the needs of the healthcare system by increasing the number of physicians who go into a primary care field and practice medicine in resource-poor settings[41].

Participants who consider the impact of global health work on US patient care point to US national policies and the social determinants of health as being important for improving patient health. These narratives are supported by evidence that points to income and other economic inequalities as important drivers of poor population health,[43] and the realization that, while the US spends more money on healthcare than the rest of the world combined,[44] it continues to lag behind other high-income countries in life expectancy.[13] These participants suggest the need for domestic and foreign collective reforms to bring about significant health improvements.

Our study found that global health physicians and global health program leaders do not feel greater agency to bring about policy or systems-level changes to the US healthcare system because of their global health experiences. This could be the result of a multitude of factors, such as an increased awareness to the obstacles that stand in the way of reform, a recognition of the immensity of reform required, or an understanding of the difficulty of bringing about positive changes in the current political context.

Limitations

The homogeneity of the research team is a notable limitation of this study, with lead researchers all from North America and predominantly white men, thus affecting the formulation of the research questions, the data received, and the analysis conducted. We reached out to 159 individuals and programs, 30 opened the questionnaire link, and only 12 completed the questionnaire (7.5% response rate). The study's small sample size was most likely a result of physician and program leadership survey fatigue—which, the research team was told directly by several who declined to participate—limiting the generalizability of our findings. Future qualitative research on this or similar participant demographics should consider survey fatigue and explore ways to increase response rates, such as more in-person interviews and, if ethically feasible, participant observation. A more grounded research design that develops interview guides based on initial questionnaire responses will likely improve the scope and focus of participant responses, as well. While thematic saturation was not achieved, we hope that our identified themes can act as a starting point for future research on the topic of how global health work is perceived to impact US patient care. One example might be an experimental study investigating global health physician spending patterns compared to physicians who have not practiced abroad. We also feel that future research seeking to understand the growing interest in the global health field could investigate how perceived conflict of values between altruistically-driven physicians and the US healthcare system could act as a potential force in generating more interest in global health, and how the US healthcare system or individual institutions could decrease physician discontentment associated with a conflict of care values.

CONCLUSIONS

This exploratory qualitative study only begins to scratch the surface of understanding the impact of global health work on US patient care and the US healthcare system. Among the five themes identified through questionnaires and interviews with global health physicians and global health program leaders, two themes were centered on the impact of global health work on US patient care: global health may improve patient rapport for physicians caring for immigrant and low socioeconomic patients, may reduce healthcare spending by providers, and may lead to more effective patient care. The other three identified themes were that global health work is largely motivated by altruistic values, leads to a greater awareness of the social determinants of health, and gives rise to a better understanding of the strengths and weaknesses of the US healthcare system. Participants saw these themes as inter-related, such as how global health work allows for more personally rewarding physician–patient interactions compared to the US healthcare system, which was viewed as flawed, unwieldy, and obdurate, and in need of reform.

STATEMENTS

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Competing interests
NMT is a student at, DC and SB are faculty members at, and DC and SH are employed part-time at a public university (University of Washington). DC and SH are employed by, and BA, SM, and DM work in partnership with a nonprofit healthcare company (Possible) that delivers free healthcare in rural Nepal using funds from the Government of Nepal and other public, philanthropic, and private foundation sources. BA is a faculty member at a public university (University of California, San Francisco). SM and DM are faculty members at a private university (Icahn School of Medicine at Mount Sinai). DM is a non-voting member on *Possible*'s board of directors but receives no compensation. All authors have read and understood BMJ Open's policy on competing interests and declare that we have no competing financial interests. The authors do, however, believe strongly that healthcare is a public good, not a private commodity.

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Conceived and designed the study: NMT, DC, SH, SB, DM
Collected and analyzed the data: NMT
Interpreted the results: NMT, DC, SH, BA, SM, SB, DM
Wrote the manuscript draft: NMT, DC, SH
Edited and revised the manuscript draft: NMT, DC, SH, BA, SM, SB, DM
Reviewed and approved the final manuscript draft: NMT, DC, SH, BA, SM, SB, DM

Data sharing statement:
The datasets supporting the conclusions of the article are available in de-identified form by emailing: research@possiblehealth.org.

Ethics approval and consent to participate
This study received exemption through the Human Subjects Division, University of Washington's Ethical Review Board (00000104) and the Brigham and Women's Hospital Institutional Review Board (2016P000365/BWH). Participants were informed of the study objectives using an electronic information sheet as part of the initial questionnaire and electronic online consent was obtained before beginning any research procedures. Participants who were invited for interviews also gave additional verbal or written informed consent.

Consent for publication
No applicable.

Supplemental Materials

Supplemental File 1: Interview Guide

REFERENCES

1. Nelson BD, Kasper J, Hibberd PL, Thea DM, Herlihy JM. Developing a Career in Global Health: Considerations for Physicians-in-Training and Academic Mentors. *Journal of Graduate Medical Education* 2012;**4**(3):301-06 doi: 10.4300/JGME-D-11-00299.1.
2. Crane J. Scrambling for Africa? Universities and global health. *The Lancet*;**377**(9775):1388-90 doi: http://dx.doi.org/10.1016/S0140-6736(10)61920-4.
3. Federico SG, Zachar PA, Oravec CM, Mandler T, Goldson E, Brown J. A successful international child health elective: The university of colorado department of pediatrics' experience. *Archives of Pediatrics & Adolescent Medicine* 2006;**160**(2):191-96 doi: 10.1001/archpedi.160.2.191.
4. Hamel L, Kirzinger A, Brodie M. The Henry M. Kaiser Family Foundation. *2016 Survey of Americans on the U.S. Role in Global Health.* 2016. https://www.kff.org/global-health-policy/poll-finding/2016-survey-of-americans-on-the-u-s-role-in-global-health/.
5. Crane JT. *Scrambling for Africa : AIDS, expertise, and the rise of American global health science*. Ithaca: Ithaca : Cornell University Press, 2013.
6. Lasker J. *Hoping to help : the promises and pitfalls of global health volunteering*. Ithaca: Ithaca : ILR Press, an imprint of Cornell University Press, 2016.
7. Crump JA, Sugarman J. Ethical considerations for short-term experiences by trainees in global health. *JAMA* 2008;**300**(12):1456-58 doi: 10.1001/jama.300.12.1456.
8. Kanter SL. Global Health is More Important in a Smaller World. *Acad Med* 2008;**83**(2):115-16 doi: 10.1097/01.acm.0000305155.66318.58.
9. Association of American Medical Colleges. *Matriculating Student Questionnaire: 2016 All Schools Summary Report.* 2016. https://www.aamc.org/download/474258/data/msq2016report.pdf.
10. McCoy D, Mwansambo C, Costello A, Khan A. Academic partnerships between rich and poor countries. *Lancet* 2008;**371** doi: 10.1016/s0140-6736(08)60466-3.
11. Kerry VB, Walensky RP, Tsai AC, Bergmark RW, Bergmark BA, Rouse C. US medical specialty global health training and the global burden of disease. *Journal of global health* 2013;**3** doi: 10.7189/jogh.03.020406.
12. Bezruchka S. Medical tourism as medical harm to the third world: Why? For whom? *Wilderness Environ Med* 2000;**11** doi: 10.1580/1080-6032(2000)011[0077:mtamht]2.3.co;2.
13. Council NR. *Explaining Divergent Levels of Longevity in High-Income Countries*. Washington, DC: The National Academies Press, 2011.
14. Hart G, Skillman S, Fordyce M, Thompson M, Hagopian A, Konrad T. International Medical Graduate Physicians In The United States: Changes Since 1981. *Health Aff* 2007;**26**(4):1159-69 doi: 10.1377/hlthaff.26.4.1159.
15. Mills EJ, Schabas WA, Volmink J, et al. Should active recruitment of health workers from sub-Saharan Africa be viewed as a crime? *The Lancet* 2008;**371**(9613):685-88 doi: https://doi.org/10.1016/S0140-6736(08)60308-6.
16. Hagopian A. Recruiting Primary Care Physicians From Abroad: Is Poaching From Low-Income Countries Morally Defensible? *The Annals of Family Medicine* 2007;**5**(6):483-85 doi: 10.1370/afm.787.
17. Loiseau B, Sibbald R, Raman SA, Benedict D, Dimaras H, Loh LC. 'Don't make my people beggars': a developing world house of cards. *Community Development Journal* 2016;**51**(4):571-84 doi: 10.1093/cdj/bsv047.

18. Green T, Green H, Scandlyn J, Kestler A. Perceptions of short-term medical volunteer work: a qualitative study in Guatemala. *Global Health* 2009;**5**(1):4 doi: 10.1186/1744-8603-5-4.
19. Shah S, Wu T. The medical student global health experience: professionalism and ethical implications. *J Med Ethics* 2008;**34** doi: 10.1136/jme.2006.019265.
20. Wendland CL. Moral Maps and Medical Imaginaries: Clinical Tourism at Malawi's College of Medicine. *American Anthropologist* 2012;**114**(1):108-22 doi: 10.1111/j.1548-1433.2011.01400.x.
21. Redko C, Bessong P, Burt D, et al. Exploring the Significance of Bidirectional Learning for Global Health Education. *Annals of Global Health* 2016;**82**(6):955-63 doi: https://doi.org/10.1016/j.aogh.2016.11.008.
22. Lough BL, Matthew L. International Forum for Volunteering in Development. *Forum Discussion Paper 2013: Measuring and Conveying the Added Value of International Volunteering.* 2013. http://forum-ids.org/2013/12/forum-discussion-paper-2013-measuring-and-conveying-added-value/#exec_summary.
23. Citrin D. The Anatomy of Ephemeral Healthcare: "Health Camps" and Short-Term Medical Voluntourism in Remote Nepal. *Studies in Nepali History and Society* 2010;**15**(1):27-72.
24. Grennan T. A Wolf in Sheep's Clothing? A Closer Look at Medical Tourism. *McMaster University Medical Journal* 2003;**1**(1):50-54.
25. Hunt MR, Godard B. Beyond procedural ethics: Foregrounding questions of justice in global health research ethics training for students. *Glob Public Health* 2013;**8**(6):713-24 doi: 10.1080/17441692.2013.796400.
26. Banatvala N, Doyal L. Knowing when to say "no" on the student elective. *Students going on electives abroad need clinical guidelines* 1998;**316**(7142):1404-05 doi: 10.1136/bmj.316.7142.1404.
27. 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** doi: 10.4269/ajtmh.2010.09-0692.
28. Smith JK, Weaver DB. Capturing Medical Students' Idealism. *Annals of Family Medicine* 2006;**4**:S32-S37 doi: 10.1370/afm.543.
29. Gupta AR, Wells CK, Horwitz RI, Bia FJ, Barry M. The International Health Program: the fifteen-year experience with Yale University's Internal Medicine Residency Program. *The American Journal of Tropical Medicine and Hygiene* 1999;**61**(6):1019-23 doi: doi:https://doi.org/10.4269/ajtmh.1999.61.1019.
30. World Development Indicators: World Development Indicators. http://data.worldbank.org/data-catalog/world-development-indicators.
31. Koplan JP, Bond TC, Merson MH, et al. Towards a common definition of global health. *The Lancet* 2009;**373**(9679):1993-95 doi: https://doi.org/10.1016/S0140-6736(09)60332-9.
32. Beaglehole R, Bonita R. What is global health? *Global Health Action* 2010;**3**(1):5142 doi: 10.3402/gha.v3i0.5142.
33. DiCicco-Bloom B, Crabtree BF. The qualitative research interview. *Med Ed* 2006;**40**(4):314-21 doi: 10.1111/j.1365-2929.2006.02418.x.
34. Pope C, Ziebland S, Mays N. Analysing qualitative data. *Bmj* 2000;**320**(7227):114.
35. Lateef F. Patient expectations and the paradigm shift of care in emergency medicine. *Journal of Emergencies, Trauma, and Shock* 2011;**4**(2):163-67 doi: 10.4103/0974-2700.82199.
36. Brock DW, Buchanan A. For-Profit Enterprise in Health Care. In: Gray B, ed. Washington, DC: The National Academies Press, 1986:580.

37. Staiger DO, Auerbach DI, Buerhaus PI. Health Care Reform and the Health Care Workforce — The Massachusetts Experience. *New England Journal of Medicine* 2011;**365**(12):e24 doi: 10.1056/NEJMp1106616.
38. Sinsky C, Colligan L, Li L, et al. Allocation of physician time in ambulatory practice: A time and motion study in 4 specialties. *Annals of internal medicine* 2016;**165**(11):753-60 doi: 10.7326/M16-0961.
39. Bentley TGK, Effros RM, Palar K, Keeler EB. Waste in the U.S. Health Care System: A Conceptual Framework. *Milbank Quarterly* 2008;**86**(4):629-59 doi: 10.1111/j.1468-0009.2008.00537.x.
40. Ledley FD, Lovejoy FH. Factors Influencing the Interests, Career Paths, and Research Activities of Recent Graduates From an Academic, Pediatric Residency Program. *Pediatrics* 1993;**92**(3):436.
41. 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** doi: 10.1097/ACM.0b013e3180305cf9.
42. Ruchman SG, Singh P, Stapleton A. Why US Health Care Should Think Globally. *AMA journal of ethics* 2016;**18**(7):736-42 doi: 10.1001/journalofethics.2016.18.7.msoc1-1607.
43. Bezruchka S. The Hurrider I Go the Behinder I Get: The Deteriorating International Ranking of U.S. Health Status. *Annual review of public health* 2012;**33**(1):157-73 doi: 10.1146/annurev-publhealth-031811-124649.
44. Avendano M, Kawachi I. Invited Commentary: The Search for Explanations of the American Health Disadvantage Relative to the English. *American Journal of Epidemiology* 2011;**173**(8):866-69 doi: 10.1093/aje/kwq484.

Global Health Physician (GHP) Study – Interview Guide

Summarize before starting the interview: research topic, inform time required for interview, ask for permission to record.

Our informal discussion/interview will last between 30-60 minutes. We've drafted some questions to help guide this semi-structured interview, but are also interested in your own thoughts, reflections, and experiences about global health physician practice.

1. Tell me about a little about your Clinical and/or Research work abroad.

2. Over _____ years working abroad, how has your perspective changed?

3. I know you've worked in quite a few different countries, including _____. How do you reflect on these experiences?

3. You mentioned in your survey that your global health work has influenced your perspective by _____.*

If participant doesn't answer above with specific events: "Are there any anecdotes, experiences, or people that influenced your perspective?"*

4. What was it about the nature of your work, or the location in which you worked that influenced this perspective?

5. How does, if at all, your global health work inform your perspective on the US healthcare system?

6. The field of global health is rapidly growing; what are your thoughts on this phenomenon?

7. Do you feel an agency to bring about change? If so, how, where, and to what extent?

8. Of your colleagues, students, or program associates who also work abroad, how have they been changed by their experiences? Do you talk about these changes?

9. How are physicians who work abroad different than physicians who do not? In regards to personal values or how they practice medicine?

10. How important do you think the values and perspectives of physicians are before they work abroad in shaping their global health experiences?

11. Is there anything further you'd like to tell or reflect on, or you feel is worth asking other global health physicians or those who work in the field about?

Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist

No	Item	Guide questions/description	Location in Manuscript
Domain 1: Research team and reflexivity			
Personal Characteristics			
1.	Interviewer/facilitator	NMT administered questionnaire and conducted interviews	
2.	Credentials	MPH-candidate	
3.	Occupation	Student	
4.	Gender	Male	
5.	Experience and training	Graduate-level qualitative methods training	
Relationship with participants			
6.	Relationship established	No	
7.	Participant knowledge of the interviewer	Participants were briefed during online informed consent process about the study purpose, recruitment and study procedures.	Methods/pg 7
8.	Interviewer characteristics	Research team members' positionality described and contextualized.	Discussion/pg 18
Domain 2: study design			
Theoretical framework			
9.	Methodological orientation and Theory	Open coding with thematic content analysis	Methods/pg 6
Participant selection			
10.	Sampling	Convenience and snowball sampling	Methods/pg 5
11.	Method of approach	Prospective participants identified through internet search of global health programs associated with academic medical centers. Individuals were then contacted via email.	Methods/pg 5
12.	Sample size	18	Results/pg7-8

13.	Non-participation	159 recruitment emails sent with 7.5% response rate. Of 12 participants completing questionnaire, 4 completed interview. 6 additional interview participants identified via snowball sampling. For the participants who completed the questionnaire but not the interview, no reason was given but survey fatigue suspected.	Results/pg7-8
Setting			
14.	Setting of data collection	Data collected remotely via online questionnaire and phone interview.	
15.	Presence of non-participants	No	
16.	Description of sample	1. US-trained, post-residency physicians participating in a global health program based in a World Bank defined low- or middle-income country; 2. US-trained physicians currently providing patient care and/or conducting healthcare research or mentorship (including education) for at least one month out of the year in a low- or middle-income country, and who are affiliated with an established global health program supported by an academic medical center; and 3. US-trained physicians who have at least a cumulative of five years of global health experiences in a low- or middle-income country.	Methods/pg 5
Data collection			
17.	Interview guide	Questionnaires and interview questions were not provided to participants in advance. General questionnaire and interview content was included in the informed consent process. Both questionnaire and interview guide were pilot-tested. Each interview was adapted to explore participant's expertise,	Methods/pg

		positionality, and questionnaire responses.	
18.	Repeat interviews	Repeat interviews were not carried out, but follow-up questions were posed to some participants via email to clarify interview responses.	
19.	Audio/visual recording	Interviews were audio recorded.	Methods/pg 6
20.	Field notes	Field notes were taken during interviews.	Methods/pg 6
21.	Duration	Interviews lasted between 30-60minutes.	
22.	Data saturation	Thematic saturation was discussed during the ongoing data analysis process. Thematic saturation was not reached nor were ongoing interviews withheld due to thematic saturation.	
23.	Transcripts returned	No, interview transcripts were not returned to participants for clarity.	
Domain 3: analysis and findings			
Data analysis			
24.	Number of data coders	1 coder, NMT.	
25.	Description of the coding tree	A coding tree was not used during analysis.	
26.	Derivation of themes	Preliminary themes were identified during literature review and used to construct categories for questionnaires. Themes for interview probes were identified based on participant questionnaire responses. Thematic analysis was used to identify other emergent themes, presented in results.	
27.	Software	No.	
28.	Participant checking	No.	
Reporting			
29.	Quotations presented	Yes.	Results/pg 9-15
30.	Data and findings consistent	Yes	Results/pg 8

31.	Clarity of major themes	Yes, see Table 1.	Methods/pg 8
32.	Clarity of minor themes	Only major emergent themes are discussed	