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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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Title: 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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39 ABSTRACT

40 Objectives

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

45 Design

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

51 Participants

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

55 Results

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

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3 61 compared to systems in other countries; and 6) a reinforcement of values that initially motivated
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5 62 physicians to pursue work in global health.
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8 63

9 10 64 **Conclusions**

11
12 65 Global health physicians and program leaders expressed that their international
13
14 66 engagements improved patient care in the United States. However, these anecdotal observations
15
16 67 were contextualized by recognizing the importance of factors such as the social determinants of
17
18 68 health and the challenges of changing United States healthcare policy.
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22 23 24 70 **ARTICLE SUMMARY**

25 26 71 **Strengths and limitations of this study**

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28 72
- 29 73 • This study examines how international global health work influences the practices and
30
31 74 perceptions of US-based global health physicians and program leaders.
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33 75
 - 34 76 • Using thematic analysis, an online questionnaire and adaptive, semi-structured interviews
35
36 77 yielded 6 nuanced themes.
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38 78
 - 39 79 • Low questionnaire response rate and homogeneity of research team members limits
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41 80 generalizability and extent of research findings.
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78 BACKGROUND

79 Interest in the field of global health has been rapidly growing over the last decade¹⁻³, as
80 has United States' (US) support for international efforts aimed at improving health in low- and
81 middle-income countries⁴. As a result, many academic medical institutions and organizations
82 have stepped up to meet this demand, offering more opportunities to study, work, and conduct
83 research in the field of global health⁵⁻⁸. As of 2016, more than one-third of all matriculated US
84 medical students reported volunteering internationally⁹. To offer medical students opportunities
85 in global health, academic medical institutions must often collaborate with foreign and
86 multinational institutions, both public and private, to create working opportunities and to provide
87 care¹⁰. These relationships vary by program and school, with the majority providing practical
88 training opportunities, such as global health clinical rotations for medical students and residents,
89 direct service delivery engagements, research opportunities in the health sciences, and diverse
90 training collaborations¹¹. Some question the ethics of these engagements as forms of “medical
91 tourism,” considering the population health status in the US pales in comparison to other high-
92 income nations^{12 13} and because a growing number of foreign- born and foreign-trained
93 physicians immigrate to the US to practice medicine in underserved communities¹⁴. This
94 healthcare workforce exchange may harm healthcare systems^{15 16}, and displace financial
95 resources¹⁷.

96 With the proliferation of global health programs has come a growing body of research
97 and literature examining the impact of global health programs on non-US communities¹⁸⁻²² and
98 how these programs influence the values and perspectives of short-term global health
99 participants²³. But a gap remains in how global health work influences the values of post-
100 graduate, licensed physicians who continue to work in global health and what impact these

101 programs may have on the US communities in which these physicians return to work and live.

102 This qualitative study attempts to understand the perspectives of US-based global health

103 physicians and program leaders on how research and patient care conducted abroad influences

104 their perspectives, values, and healthcare practices back home in the US.

105

106 **METHODS**

107 **Participant and data collection**

108 We recruited participants from two groups: global health physicians and global health
109 program leaders affiliated with academic medical institutions. We developed inclusion criteria to
110 purposively reflect diverse perspectives based on duration of global health experience and
111 positionalities within global health programs. We initially used convenience sampling²⁴ to recruit
112 participants for the online questionnaire by first identifying academic medical institutions with
113 global health programs through structured online searches, followed by snowball sampling
114 through colleague recommendations and purposeful sampling²⁵ to recruit additional
115 interviewees. The study recruitment criteria for the global health physician category required
116 participants to match at least one of the following:

- 117 1. US-trained, post-residency physicians participating in a global health program based in a
118 World Bank defined low- or middle-income country²⁶;
- 119 2. US-trained physicians currently providing patient care and/or conducting healthcare
120 research or mentorship (including education) for at least one month out of the year in a
121 low- or middle-income country, and who are affiliated with an established global health
122 program supported by an academic medical center; and

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2
3 123 3. US-trained physicians who have at least a cumulative of five years of global health
4
5 124 experiences in a low- or middle-income country.

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7
8 125 The study recruitment criteria for global health program leadership required that participants be
9
10 126 program faculty or staff affiliated with an academic medical institution offering an accredited
11
12 127 global health program. Several selected participants fit the criteria for both global health
13
14 128 physician and global health program leadership and their responses were analyzed within both
15
16 129 categories.

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19 130 We designed the questionnaire and survey questions to elicit open-ended responses about
20
21 131 global health physicians' personal experiences researching and practicing abroad, while program
22
23 132 leaders were asked questions regarding their experiences overseeing programs and their
24
25 133 perspectives on the field more broadly (see Supplemental File 1). Participants who fell into both
26
27 134 categories were asked questions from both instruments. Recognizing the ambiguity of key
28
29 135 terminology such as global health^{27 28}, we shared with participants the study's focus on
30
31 136 healthcare practices in a global context prior to recruitment. The research instruments consisted
32
33 137 of an online questionnaire developed and administered through Research Electronic Data
34
35 138 Capture, comprised of open-ended questions and short response questions identifying
36
37 139 demographic information.

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40 140 We utilized an adaptive approach to semi-structured interview techniques²⁹ by
41
42 141 personalizing questions to further explore participant's expertise, positionality, and questionnaire
43
44 142 responses. Interviews were recorded, relevant portions were transcribed with structured notes,
45
46 143 and then coded (by NMT) and analyzed by hand using thematic analysis (conducted by NMT,
47
48 144 DC, SH, and SB) in relation to identified questionnaire themes³⁰. We have incorporated
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50 145 researcher comments—distinguished by bracketed text within direct quotations—to provide
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3 146 clarity to the quote based on information and context provided from the full interview. In the text
4
5 147 below, the names of all participants remain anonymous, and are cited using a notational system
6
7 148 to differentiate between global health physician and program leadership participant groups, and
8
9 149 if the quote comes from an interview or questionnaire; for example, (*Global Health Physician*
10
11 150 #1, *interview* [GHP, hereafter]), or *Program Leadership* #3, questionnaire [PL, hereafter]).
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16 152 **Ethics, consent, and permissions**

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18
19 153 This study received exemption through the Human Subjects Division, University of
20
21 154 Washington's Ethical Review Board (00000104) and the Brigham and Women's Hospital
22
23 155 Institutional Review Board (2016P000365/BWH). Participants were informed of the study
24
25 156 objectives using an electronic information sheet as part of the initial questionnaire and electronic
26
27 157 online consent was obtained before beginning any research procedures. Participants who were
28
29 158 invited for interviews also gave additional verbal or written informed consent.
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34 160 **Patient and public involvement**

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37 161 Neither patients nor the general public were directly involved in the study design, data
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39 162 collection, or analysis. The underlying research question was informed by a gap in the literature
40
41 163 on understanding the impact that global health physicians have on domestic healthcare practices
42
43 164 in the US. We hope that these results will inform future research designs that explore these
44
45 165 themes in-depth, and connect them with patient-centered outcomes research and other forms of
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47 166 community-based participatory research. We plan to pursue further dissemination of the results
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49 167 to the public and will consider strategies to engage the public.
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3 **169 RESULTS**
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5 **170** We sent 159 recruitment emails to global health physicians and global health program
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7 **171** leaders at 25 different academic medical institutions. Eight global health physicians and four
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9 **172** global health program leaders completed the online questionnaire, while one global health
10
11 **173** physician and three global health program leaders who completed the questionnaire agreed to
12
13 **174** participate in a semi-structured interview. We also conducted semi-structured interviews with six
14
15 **175** global health physicians and two global health program leaders who identified through
16
17 **176** purposeful sampling. In total, participants represented seven unique academic medical
18
19 **177** institutions located throughout the US and ranged from 33 to 68 years of age. We present in
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21 **178** Table 1 emergent themes identified through analysis of the qualitative data.
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26 **179**

27
28 **180** Table 1. Themes: How Global Health Work Influences the US healthcare system
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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

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47 **181**

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49 **182 Improved patient rapport**
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52 **183** All eight of the interviewed participants indicated that their global health work had
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54 **184** improved their ability to build rapport with and provide care for immigrant, refugee, and low-
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3 185 income individuals in the US. They attributed perceived improved patient rapport to a variety of
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5 186 reasons, such as being able to speak to patients in their own language, understand their cultural
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7 187 background, and better understand the challenges unique to immigrant, refugee, and low
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10 188 socioeconomic position patients. As one participant noted, “If I bring some of these things up,
11
12 189 then I break a barrier and have a good relationship very quickly” (*Global Health Physician #1*,
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14 190 interview). Another participant discussed similar experiences that have helped them build rapport
15
16
17 191 in the emergency department where they work: “I speak a couple languages which working
18
19 192 abroad has taught me. I speak Spanish, I speak Creole, so...[with some patients] there is that
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21 193 automatic connection” (*Global Health Physician #3*, interview). Several participants remarked
22
23 194 during interviews and in questionnaire responses that patient rapport is vital to the work of caring
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25 195 for patients, and that learning to speak another language was a direct result of their global health
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27
28 196 work.

197 198 **Improved and more engaged patient care**

199 Half of participants reported that their global health work improved the quality of care
200 they were able provide to their patients back home. Participants reported this as being “more
201 efficient” as a result of taking better patient histories and physical exams, that they were less
202 inclined to carry out “unnecessary and invasive tests,” or more patient-centered³¹ as they had a
203 greater awareness to patient’s economic and/or cultural context. One participant reported that
204 they were “more likely to speak to a patient about options that did not include very aggressive
205 care,” and that they may be “a little more comfortable” offering to “do nothing” (*PL #6*,
206 interview). The following participant quote also exemplifies this theme:

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3 208 “Each time I practice abroad and then come back to the US, I find that I am more
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5 209 compassionate and empathetic, because I have been practicing how to focus on the
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8 210 person in front of me while I was away, and to think clinically (instead of focusing on the
9
10 211 computer and the paperwork.” (*GHP #4*, questionnaire)
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12 212
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14 213 Several participants doubted whether these improvements in patient care were significant, and
15
16 214 questioned whether they could be accurately measured.
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21 216 **Reduced healthcare spending**
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24 217 The interviewees and questionnaire participants were divided on the extent to which their
25
26 218 global health work experience translated into cost savings for US patients. The majority,
27
28 219 however, reported that learning to practice medicine with fewer resources translated into more
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30 220 reliance on patient histories, physical exams, and less on medical tests. Several also reported a
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32 221 greater awareness of over-spending patterns in the US healthcare system - as one family
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34 222 physician wrote:
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40 224 “I have been able to think more clinically and utilize my medical knowledge in a way that
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42 225 I cannot always do in the US. With limited resources, the physical exam and limited
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44 226 testing becomes critical in diagnosis and following up patient responses to treatment.
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47 227 When I return, I find that I do not need to rely on the technology as much and can focus
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49 228 on the patient.” (*GHP #4*, questionnaire)
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3 230 Participants who did not think that their global health work resulted in cost savings for US
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5 231 patients expressed that they believed the differences in cost savings to be negligible. No
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8 232 participants reported feeling that global health work resulted in more costly care for US patients
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10 233 or the healthcare system.
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14 235 **The social determinants of health and the limits of healthcare**

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17 236 Half of the study participants reported global health work gave them a better
18
19 237 understanding of the broader, underlying factors that contribute to patient health, including the
20
21 238 challenges of accessing healthcare. This was reported as either reinforcing participant's prior
22
23 239 perspectives on the social determinants of health, or helping participants to recognize the social
24
25 240 and political-economic factors related to health both abroad and in the US. One global health
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27 241 physician working in internal medicine responded that their work abroad led to a broader sense
28
29 242 of why their patients are "how they are, so it is not just they are uneducated, it is also their father
30
31 243 is an alcoholic and also that they are addicted to pain pills, and also that they are overweight."
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33 244 Here global health work "helps you connect the dots between seemingly unconnected
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35 245 psychosocial things" (*GHP #3*, interview). This participant located this thinking within the social
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37 246 determinants of health more broadly:
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44 248 "Poverty, corruption, gender inequality, lack of education, years of war and the
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46 249 subsequent post-traumatic stress disorder that affects an entire nation all are the biggest
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48 250 influencers of well-being." (*GHP #3*, questionnaire)
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54 252 Several participants discussed the distinction between healthcare and health, often in the
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3 253 context of doubting the extent to which global health physicians could, themselves, improve
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5 254 health through providing healthcare in the US or abroad. As one participant wrote, “my
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7 255 experience working abroad has strengthened my belief that ‘well-being’ (or ‘health’ as defined by
8
9 256 the World Health Organization) is very minimally influenced by the medical care I provide as an
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11 257 individual physician and also minimally influenced by the medical care provided by a healthcare
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13 258 system” (*GHP #3*, questionnaire). These participants advocated for a more nuanced
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15 259 understanding of the factors that influence health and felt that their global health work either
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17 260 brought them to this realization, or reaffirmed their understandings of the social determinants of
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19 261 health.
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26 263 **Rethinking the United States healthcare system**

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28 264 Seven out of the eight interview participants acknowledged the importance of their global
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30 265 health work in helping to better understand the strengths and weaknesses of the US healthcare
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32 266 system. This was attributed to a variety of factors unique to the field of global health, such as
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34 267 conversations with non-US healthcare practitioner counterparts and experience working within
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36 268 non-US healthcare systems, as these two responses reveal:
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42 270 “I have had a lot of conversations with colleagues in Ukraine, because they are
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44 271 undergoing a lot of reform...we have a lot of talks about the kind of differences, weakness
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46 272 in each [Ukraine and US healthcare systems] and what is similar.” (*PL #7*, interview)
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3 274 “Having the experience of working in many different healthcare systems... allows you to
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5 275 see in every variety and every system there are things that work well and things that don
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8 276 not.” (PL #6, interview)
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12 278 Participants framed these comparisons on the weaknesses of the US healthcare system by
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14 279 discussing the motivations and standard practices of other healthcare systems. As one participant
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16
17 280 noted during an interview, “The goal of many countries’ healthcare system is to serve their
18
19 281 citizens fully... They start off in a different place than where we are” (PL #7, interview).
20

21 282 Participants also contrasted the cultural role of healthcare in various settings. These
22
23 283 discussions were focused on perceived changes or shortcomings in US healthcare practices that
24
25 284 negatively affected patient care, as well as physician satisfaction and prestige. One participant
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28 285 noted that they “do not get the experience of saving lives in the US” and “I do not get the same
29
30 286 level of gratitude from the patients” (GHP #3, interview). This perspective was reiterated by
31
32 287 another participant who discussed how they and other physicians “look nostalgically to a time
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34
35 288 when there was more enthusiasm for the work that physicians did”; though, they “try to keep the
36
37 289 dissatisfying thoughts at bay.” This was attributed to them spending “a lot of time doing
38
39 290 paperwork, less time doing patient interaction or [having] meaningful patient interaction” (PL
40
41 291 #6, interview). The following participant quote exemplifies how participants framed their
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43
44 292 perceptions of the US healthcare system. They perceived a decline in the US healthcare system
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46
47 293 and that global health work was seen as a more personally beneficial and altruistic endeavor:
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3 295 “We do not practice evidence based medicine anymore [in the US], we practice lawsuit
4 based and insurance based medicine now. I am a hired gun here. I collect a paycheck and
5 296
6 based and insurance based medicine now. I am a hired gun here. I collect a paycheck and
7 then go back [abroad].” (*GHP #3*, interview)
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12 299 Several interview participants identified current and future potential challenges of
13 infectious disease epidemics to the US healthcare system, and the perceived benefits of global
14 300
15 infectious disease epidemics to the US healthcare system, and the perceived benefits of global
16 health work in primary, secondary, and tertiary prevention. One participant noted, “If we are not
17 301
18 prepared to fight that pandemic, like Ebola or Severe Acute Respiratory Syndrome, in the place
19 302
20 where it starts then that will eventually come to anybody anywhere in the world” (*PL #6*,
21 303
22 interview). Another participant discussed epidemics and the perceived benefits of global health
23 304
24 work to infectious disease control:
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28
29 307 “I see a lot of infections when I’m overseas that then periodically show up here and I
30 think I’m one of the few people that could actually like deal with [it]. So, it informs the
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32 technical aspect of my job.” (*PL #6*, interview)
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37

38 311 One of the primary research questions was whether a greater recognition of the strengths
39 and weakness of the US healthcare system could lead to a culture of change amongst global
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41 health physicians in their US sites of practice. The participants responded in a variety of ways –
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43 most of which contained elements of doubt, cynicism, disinterest, or a perceived greater ability
44 314
45 to support impactful changes to foreign healthcare systems. Discussing their personal
46 315
47 experiences with the US healthcare system, one participant noted: “There are so many competing
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49 agendas, and it is the big money that is going to win out. I hate to sound cynical” (*PL #7*,
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3 318 interview). Another participant explained that their work providing technical expertise to the
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5 319 Kenyan Health Ministry “can make public health decisions that have a big impact much more
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7
8 320 easily than anybody here can have” (*PL #6*, interview). Several participants discussed how they
9
10 321 had previously been involved in US healthcare advocacy and reform work, but had either lost
11
12 322 interest, were too busy with their global health work, or had felt that they were able to bring
13
14 323 about more meaningful reforms in non-US healthcare systems:
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19 325 “One of the things is I used to follow US medical care, a lot, but I can’t keep up, just
20
21 326 because I try to keep up with things going on overseas...I used to know a lot about this
22
23 327 stuff.” (*PL #2*, interview)
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27 28 329 **Values behind interest in global health**

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30 330 All interviewed participants reported that their values were not changed by their global
31
32 331 health work, but rather their values drove them to pursue global health in the first place—or
33
34 332 allowed them to “find a niche in which to put their values, (*Program Leadership*, interview #2),
35
36 333 as one participant noted. Furthermore, five interviewees mentioned that global health was a field
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38 334 that self-selected for individuals with altruistic values:
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43
44 336 “I think that many people who choose to do global health [have] ...stronger altruistic
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46 337 focus or willingness to devote their time.” (*Global Health Physician #1*, interview)
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3 339 Several participants mentioned that their values came from their familial upbringing, religious
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5 340 background, or political ideology, and that pursuing careers in global health was a way for them
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7
8 341 to put their values into practice.
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10 342

11
12 343 **DISCUSSION**

13
14 344 This exploratory study contributes to an expanded understanding of the ways in which
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16 345 global health physicians and global health program leaders understand their work in relationship
17
18 346 to the field of global health and the US healthcare system. Study participant responses reflect a
19
20 347 shared understanding of the ways in which the US healthcare system treats patients as ‘paying
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22 348 customers’—a product of the US fee-for-service and for-profit healthcare model³²—in
23
24 349 comparison to the non-profit, universal, or single payer models of healthcare delivery
25
26 350 experienced by global health physician participants while abroad. Participants said that the US
27
28 351 healthcare system manifests in problematic physician-patient relationships, too much time
29
30 352 devoted to bureaucratic requirements, excessive fear of litigation, frivolous spending, overly
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32 353 aggressive medical care, and a disconnect between care providers and the lived experiences of
33
34 354 low-income and immigrant patients, all perspectives noted in other studies^{31 33-35}.

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39 355 Participants report that their personal values motivate them to pursue global health
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41 356 careers, a notion supported by studies on career choice selection³⁶ and short-term global health
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43 357 residency electives²³. They describe global health work as personally rewarding, a counterweight
44
45 358 to personal frustrations resulting from the US healthcare system. Several participants explicitly
46
47 359 state that global health work is a return to their altruistic values, an opportunity to “save lives”,
48
49 360 or to serve regardless of cost. In contrast, they describe practicing in the US as prioritizing
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51 361 pleasing the patients and the ‘worried well’ (as opposed to healing people, and understanding the
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3 362 broader roots of affliction), practicing “insurance medicine” or “liability medicine”, or “customer
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5 363 service”. They attribute these perceptions to either the volunteer nature of their global health
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8 364 work, their experiences working in non-US healthcare systems, or witnessing different provider-
9
10 365 patient relationships while abroad.

11
12 366 The most significant division amongst participants is whether they viewed their global
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14 367 health work as a vehicle for change on individual care, and/or systemic changes in the US. Those
15
16 368 that did report positive benefits of global health for improved patient-care and the changes to the
17
18 369 US healthcare system overall discuss these more at the individual level—such as reduced
19
20 370 spending, better patient care, and replicating interventions that had proven effective abroad.
21
22 371 These findings are supported by similar research looking at the perspectives of short-term global
23
24 372 health residency electives²³, international clinical rotations³⁷, and other global health
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26 373 engagement³⁸. Additionally, several participants point to the role of global health physicians in
27
28 374 preventing pandemics by being better prepared at recognizing new infectious diseases, going to
29
30 375 the source of the outbreak, and identifying the need for the US healthcare system to take
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32 376 pandemic threats more seriously.

33
34 377 A majority of participants reported having a better understanding of the weaknesses and
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36 378 strengths of the US healthcare system as a result of their global health work. Other studies argue
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38 379 that global health experiences can serve the needs of the healthcare system by increasing the
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40 380 number of physicians who go into a primary care field and practice medicine in resource poor
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42 381 settings³⁷.

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44 382 Participants who consider the impact of global health work on US patient care point to
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46 383 US national policies and the social determinants of health as being more important for improving
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48 384 patient health. These narratives are supported by evidence that points to income and other
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3 385 economic inequalities as important drivers of poor population health³⁹, and the realization that,
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5 386 while the US spends more money on healthcare than the rest of the world combined⁴⁰, it
6
7 387 continues to lag behind other high-income countries in life expectancy¹³. These participants
8
9 388 suggest the need for domestic and foreign collective reforms to bring about significant health
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11 389 improvements.

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13
14 390 Our study found that global health physicians and global health program leaders do not
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16 391 feel greater agency to bring about policy or systems-level changes to the US healthcare system
17
18 392 because of their global health experiences. This could be the result of a multitude of factors, such
19
20 393 as an increased awareness to the obstacles that stand in the way of reform, a recognition of the
21
22 394 immensity of reform required, or an understanding of the difficulty of bringing about positive
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24 395 changes in the current political context.

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30 397 **Limitations**

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32 398 The homogeneity of the research team is a notable limitation of this study, with lead
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34 399 researchers all from North America and predominantly white men, thus affecting the formulation
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36 400 of the research questions, the data received, and the analysis conducted. We reached out to 159
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38 401 individuals and programs, 30 opened the questionnaire link, and only 12 completed the
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40 402 questionnaire (7.5% response rate). The study's small sample size was most likely a result of
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42 403 physician and program leadership survey fatigue—which, the research team was told directly by
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44 404 several who declined to participate—limiting the generalizability of our findings. Future
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46 405 qualitative research on this or similar participant demographics should consider survey fatigue
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48 406 and explore ways to increase response rates, such as more in-person interviews and, if ethically
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50 407 feasible, participant observation. We hope that our identified themes can act as a starting point
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3 408 for future research on the topic of how global health work impacts US patient care. One example
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5 409 might be an experimental study investigating global health physician spending patterns
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8 410 compared to physicians who have not practiced abroad. We also feel that future research seeking
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10 411 to understand the growing interest in the global health field could investigate how perceived
11
12 412 conflict of values between altruistically-driven physicians and the US healthcare system could
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15 413 act as a potential force in generating more interest in global health.
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17 414

19 415 **CONCLUSIONS**

21 416 This exploratory qualitative study only begins to scratch the surface of understanding the
22
23 417 impact of global health work on US patient care and the US healthcare system. Among the six
24
25 418 themes identified through questionnaires and interviews with global health physicians and global
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27
28 419 health program leaders, three themes were centered on the impact of global health work on US
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30 420 patient care: global health may improve patient rapport for physicians caring for immigrant and
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32 421 low socioeconomic patients, may reduce healthcare spending by providers, and may lead to more
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34 422 effective patient care. The other three identified themes were that global health work is largely
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36
37 423 motivated by altruistic values, leads to a greater awareness of the social determinants of health,
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39 424 and gives rise to a better understanding of the strengths and weaknesses of the US healthcare
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42 425 system. Participants saw these themes as inter-related, such as how global health work allows for
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44 426 more personally rewarding physician–patient interactions compared to the US healthcare system,
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47 427 which was viewed as flawed, unwieldy, and obdurate, and in need of reform.
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431 leaders who took the time out of their busy schedules to participate and discuss their work.

432

433 Competing interests

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

445

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449 decision to publish.

450

451 Author contributions:

452 Conceived and designed the study: NMT, DC, SH, SB, DM

453 Collected and analyzed the data: NMT

454 Wrote the manuscript draft: NMT, DC, SH

455 Edited and revised the manuscript draft: all authors

456 Reviewed and approved the final manuscript draft: all authors

457

458 Data sharing statement:

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

463

464 Ethics approval and consent to participate

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

471

472 Consent for publication

473 No applicable.

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475	Supplemental Materials
476	Supplemental File 1: Interview Guide
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For peer review only

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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	<ol style="list-style-type: none"> 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	

BMJ Open

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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Primary Subject Heading:	Global health
Secondary Subject Heading:	Qualitative research, Public health, Medical education and training
Keywords:	global health, learning exchange, domestic health, health equity

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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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Keywords:

global health, learning exchange, domestic health, health equity

47 **ABSTRACT**

48 **Objectives**

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

52 53 **Design**

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

59 60 **Participants**

61 159 global health physicians and global health program leaders at 25 academic medical
62 institutions were invited via email to take a survey and participate in a follow-up interview.
63 Twelve participants completed online questionnaires (7.5% response rate) and eight participants
64 (four survey participants and four additionally recruited participants) participated in in-depth, in-
65 person or phone semi-structured interviews.

66 67 **Results**

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

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3 70 medical practice: 1) a sense of improved patient rapport, particularly with low-income, refugee,
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5 71 and immigrant patients, and improved and more engaged patient care; 2) reduced spending on
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7 72 healthcare services; 3) greater awareness of the social determinants of health; 4) deeper
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10 73 understanding of the United States healthcare system compared to systems in other countries;
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12 74 and 5) a reinforcement of values that initially motivated physicians to pursue work in global
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19 77 **Conclusions**

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21 78 A majority of participating global health physicians and program leaders believed that
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23 79 international engagements improved patient care back home in the United States. Participant
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25 80 responses relating to the five themes were contextualized by highlighting factors that
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27 81 simultaneously impinge upon their ability to provide improved patient care, such as the social
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29 82 determinants of health, and the challenges of changing United States healthcare policy.
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34 84 **ARTICLE SUMMARY**

35 85 **Strengths and limitations of this study**

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38 86
- 39 87 • Online questionnaires along with key informant interviews allowed for a more in-depth
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41 88 examination of physician and program leader perspectives.
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44 89
 - 45 90 • Thematic analysis resulted in five nuanced themes that contributes to an expanded
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47 89 understanding of how global health work shapes a culture of healthcare practice back
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49 90 home in the US; offering further points for research and exploration.
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3 91 • Thematic saturation was not achieved through data analysis, as low questionnaire
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5 92 response rate and a small number of interview participants limit the generalizability of
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7 93 research findings.
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95 BACKGROUND

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

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

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3 118 students,[26-28] or residents.[29] But a gap remains in understanding how global health work
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5 119 influences the values and practices of US-based physicians who have worked extensively, and/or
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7 120 those who continue to work intermittently, in a global health setting, and what impacts this work
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9 121 is perceived to have on the US communities in which these physicians return to work and live.
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11 122 This qualitative study attempts to understand the perspectives of global health physicians and
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13 123 program leaders in academic global health on how they believe their work abroad influences
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15 124 their viewpoints, values, and healthcare practices back home in the US.
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22 126 **METHODS**

23 127 **Participant and data collection**

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26 128 We recruited participants from two groups: global health physicians and global health
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28 129 program leaders affiliated with academic medical institutions. We developed inclusion criteria to
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30 130 purposively reflect diverse perspectives based on duration of global health experience and
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32 131 positionalities within academic global health programs. We initially used convenience sampling
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34 132 to recruit participants for the online questionnaire by first identifying academic medical
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36 133 institutions with accredited—by the Council on Education for Public Health (CEPH) or Liaison
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38 134 Committee on Medical Education (LCME)—global health programs through structured online
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40 135 searches, followed by snowball sampling through colleague recommendations and purposeful
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42 136 sampling to recruit additional interviewees. The study recruitment for the global health physician
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44 137 category required participants to match with the following criteria:

- 45 138 1. US-trained post-residency physicians currently providing patient care and/or conducting
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47 139 healthcare research, training, or mentorship (including education) for at least one month
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3 140 out of the year in a World Bank[30] defined low- or middle-income country and who are
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5 141 either:
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8 142 a. affiliated with an accredited global health program supported by an academic medical
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10 143 center, or
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12 144 b. engaged in their work through another organization or company (e.g. an
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14 145 international/non-governmental organization, consulting/technical assistance
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16 146 organization, or multi/bi-lateral development agency).
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19 147 2. US-trained physicians who have at least five-years of cumulative global health
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21 148 experience in a low- or middle-income country.
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25
26 150 The study recruitment criteria for global health program leadership required that participants be
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28 151 program faculty or staff (program coordinators, administrators, and mentors) affiliated with an
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30 152 academic medical institution offering an accredited global health program. Several selected
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32 153 participants fit the criteria for both global health physician and global health program leadership,
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34 154 and their responses were analyzed within both categories.
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38 155 We designed the questionnaire and survey questions to elicit open-ended responses about
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40 156 global health physicians' personal experiences researching and practicing abroad, while program
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42 157 leaders were asked questions regarding their experiences overseeing programs and their
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44 158 perspectives on the field more broadly (see Supplemental File 1). Participants who fell into both
45
46 159 categories were asked questions from both instruments. Recognizing the ambiguity of key
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48 160 terminology such as global health,[31 32] we shared with participants the study's focus on
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50 161 healthcare practices in a global context prior to recruitment. The research instruments consisted
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52 162 of an online questionnaire developed and administered using a Research Electronic Data Capture
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3 163 database, comprised of open-ended questions and short response questions identifying
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5 164 demographic information.
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8 165 We utilized an adaptive approach to designing the semi-structured interviews[33] by
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10 166 personalizing questions to further explore participant’s expertise, positionality, and questionnaire
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12 167 responses. Interviews were recorded, relevant portions were transcribed with structured notes,
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14 168 and then coded (by NMT) and analyzed by hand using thematic analysis (conducted by NMT,
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16 169 DC, SH, and SB) in relation to identified questionnaire themes.[34] We have incorporated
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18 170 researcher comments—distinguished by bracketed text within direct quotations—to provide
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20 171 clarity to the quote based on information and context provided from the full interview. In the text
21
22 172 below, the names of all participants remain anonymous, and are cited using a notational system
23
24 173 to differentiate between global health physician and program leadership participant groups, and
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26 174 if the quote comes from an interview or questionnaire; for example, (*Global Health Physician*
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28 175 #1, *interview* [GHP, hereafter]), or *Program Leadership* #3, questionnaire [PL, hereafter]).
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35 177 **Ethics, consent, and permissions**

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37 178 This study received exemption through the Human Subjects Division, University of
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39 179 Washington’s Ethical Review Board (00000104) and the Brigham and Women’s Hospital
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41 180 Institutional Review Board (2016P000365/BWH). Participants were informed of the study
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43 181 objectives using an electronic information sheet as part of the initial questionnaire and electronic
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45 182 online consent was obtained before beginning any research procedures. Participants who were
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47 183 invited for interviews also gave additional verbal or written informed consent.
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52 185 **Patient and public involvement**

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3 186 Neither patients nor the general public were directly involved in the study design, data
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5 187 collection, or analysis. The underlying research question was informed by a gap in the literature
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8 188 on understanding the impact that global health physicians have on domestic healthcare practices
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10 189 in the US. We hope that these results will inform future research designs that explore these
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12 190 themes in-depth, and connect them with patient-centered outcomes research and other forms of
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14 191 community-based participatory research. We plan to pursue further dissemination of the results
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16 192 to the public and will consider strategies to engage the public.
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21 194 **RESULTS**

24 195 We sent 159 recruitment emails to global health physicians and global health program
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26 196 leaders at 25 different academic medical institutions. Eight global health physicians and four
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28 197 global health program leaders completed the online questionnaire, while one global health
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30 198 physician and three global health program leaders who completed the questionnaire agreed to
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32 199 participate in a semi-structured interview. In addition, we conducted semi-structured interviews
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35 200 with six global health physicians and two global health program leaders who were identified
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37 201 through snowball and purposeful sampling. In total, participants represented seven unique
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39 202 academic medical institutions located throughout the US and ranged from 33 to 68 years of age.
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42 203 Four participants reported beginning their global health work in the 2000s, two reported
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44 204 beginning in the 1990s, and one each reported beginning in the 1980s and 1970s. We present in
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46 205 Table 1 the domains of engagement in global health for these participants and the emergent
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48 206 themes identified through analysis of the qualitative data in Table 2.
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54 208 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

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210 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

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212 Improved and more engaged patient rapport & patient care

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

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3 219 break a barrier and have a good relationship very quickly.” (*GHP #1*, interview) Another
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5 220 participant discussed similar experiences that have helped them build rapport in the emergency
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7 221 department where they work: “I speak a couple languages which working abroad has taught me.
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9 222 I speak Spanish, I speak Creole, so...[with some patients] there is that automatic connection.”
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11 223 (*GHP #3*, interview) Several participants remarked during interviews and in questionnaire
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13 224 responses that patient rapport is vital to the work of caring for patients, and that learning to speak
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15 225 another language was a direct result of their global health work.
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19 226 Half of participants reported that their global health work improved the quality of care
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21 227 they were able provide to their patients back home. Participants reported this as being “more
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23 228 efficient” as a result of taking better patient histories and physical exams, that they were less
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25 229 inclined to carry out “unnecessary and invasive tests,” or being more patient-centered[35] as they
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27 230 had a greater awareness to patient’s economic and/or cultural context. One participant reported
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29 231 that they were “more likely to speak to a patient about options that did not include very
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31 232 aggressive care,” and that they may be “a little more comfortable” offering to “do nothing.” (*PL*
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33 233 #6, interview) The following participant quote also exemplifies this theme:
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38 234 Each time I practice abroad and then come back to the US, I find that I am more
39 235 compassionate and empathetic, because I have been practicing how to focus on the
40 236 person in front of me while I was away, and to think clinically (instead of focusing on the
41 237 computer and the paperwork. (*GHP #4*, questionnaire)
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44 239 Several participants doubted whether these improvements in patient care were significant and
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46 240 questioned whether they could be accurately measured. “I don’t feel that physician experience
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48 241 abroad translates into worsened quality of patient care in the U.S. I can’t assume that it translates
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50 242 into improved quality of patient care in the U.S either.” (*GHP #3*, questionnaire)
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244 **Reduced healthcare spending**

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

251 I have been able to think more clinically and utilize my medical knowledge in a way that
252 I cannot always do in the US. With limited resources, the physical exam and limited
253 testing becomes critical in diagnosis and following up patient responses to treatment.
254 When I return, I find that I do not need to rely on the technology as much and can focus
255 on the patient. (*GHP #4*, questionnaire)
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257 Participants who did not think that their global health work resulted in cost savings for US
258 patients expressed that they believed the differences in cost savings to be negligible. No
259 participants reported feeling that global health work resulted in more costly care for US patients
260 or the healthcare system.

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262 **The social determinants of health and the limits of healthcare**

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

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3 270 is an alcoholic and also that they are addicted to pain pills, and also that they are overweight.”
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5 271 Here global health work “helps you connect the dots between seemingly unconnected
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7 272 psychosocial things” (*GHP #3*, interview). This participant located this thinking within the social
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9 273 determinants of health more broadly: “Poverty, corruption, gender inequality, lack of education,
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11 274 years of war and the subsequent post-traumatic stress disorder that affects an entire nation all are
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13 275 the biggest influencers of well-being.” (*GHP #3*, questionnaire)
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17 276 Several participants discussed the distinction between healthcare and health, often in the
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19 277 context of doubting the extent to which global health physicians could, themselves, improve
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21 278 health through providing healthcare in the US or abroad. As one participant wrote,
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24 279 My experience working abroad has strengthened my belief that 'well-being' (or 'health' as
25 280 defined by the World Health Organization) is very minimally influenced by the medical
26 281 care I provide as an individual physician and also minimally influenced by the medical
27 282 care provided by a healthcare system. (*GHP #3*, questionnaire)
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30 284 These participants advocated for a more nuanced understanding of the factors that influence
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32 285 health and felt that their global health work either brought them to this realization or reaffirmed
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34 286 their understandings of the social determinants of health.
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38 39 288 **Rethinking the United States healthcare system**

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41 289 Seven out of the eight interview participants acknowledged the importance of their global
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43 290 health work in helping to better understand the strengths and weaknesses of the US healthcare
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45 291 system. This was attributed to a variety of factors unique to the field of global health, such as
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47 292 conversations with non-US healthcare practitioner counterparts and experience working within
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49 293 non-US healthcare systems, as these two responses reveal: “I have had a lot of conversations
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51 294 with colleagues in Ukraine, because they are undergoing a lot of reform...we have a lot of talks
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53 295 about the kind of differences, weakness in each [Ukraine and US healthcare systems] and what is
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3 296 similar.” (PL #7, interview) “Having the experience of working in many different healthcare
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5 297 systems... allows you to see in every variety and every system there are things that work well and
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8 298 things that do not.” (PL #6, interview) Participants framed these comparisons on the weaknesses
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10 299 of the US healthcare system by discussing the motivations and standard practices of other
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12 300 healthcare systems. As one participant noted during an interview, “The goal of many countries’
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14 301 healthcare system is to serve their citizens fully... They start off in a different place than where
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17 302 we are.” (PL #7, interview)

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19 303 Participants also contrasted the cultural role of healthcare in various settings. These
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21 304 discussions were focused on perceived changes or shortcomings in US healthcare practices that
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23 305 negatively affected patient care, as well as physician satisfaction and prestige. One participant
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26 306 noted that they “do not get the experience of saving lives in the US” and “I do not get the same
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28 307 level of gratitude from the patients.” (GHP #3, interview) This perspective was reiterated by
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30
31 308 another participant who discussed how they and other physicians “look nostalgically to a time
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33 309 when there was more enthusiasm for the work that physicians did”; though, they “try to keep the
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35 310 dissatisfying thoughts at bay.” This was attributed to them spending “a lot of time doing
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38 311 paperwork, less time doing patient interaction or [having] meaningful patient interaction.” (PL
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40 312 #6, interview) The following participant quote exemplifies how participants framed their
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42 313 perceptions of the US healthcare system. They perceived a decline in the US healthcare system
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44 314 and that global health work was seen as a more personally beneficial and altruistic endeavor:
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47 315 “We do not practice evidence-based medicine anymore [in the US], we practice lawsuit- based
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49 316 and insurance-based medicine now. I am a hired gun here. I collect a paycheck and then go back
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51 317 [abroad].” (GHP #3, interview)

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3 318 Several interview participants identified current and future potential challenges of
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5 319 infectious disease epidemics to the US healthcare system, and the perceived benefits of global
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7 320 health work in primary, secondary, and tertiary prevention. One participant noted, “If we are not
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9 321 prepared to fight that pandemic, like Ebola or Severe Acute Respiratory Syndrome, in the place
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11 322 where it starts then that will eventually come to anybody anywhere in the world.” (PL #6,
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13 323 interview) Another participant discussed epidemics and the perceived benefits of global health
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15 324 work to infectious disease control: “I see a lot of infections when I’m overseas that then
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17 325 periodically show up here and I think I’m one of the few people that could actually like deal with
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19 326 [it]. So, it informs the technical aspect of my job.” (PL #6, interview)
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24 327 One of the primary research questions was whether a greater recognition of the strengths
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26 328 and weakness of the US healthcare system could lead to a culture of change amongst global
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28 329 health physicians in their US sites of practice. The participants responded in a variety of ways –
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30 330 most of which contained elements of doubt, cynicism, disinterest, or a perceived greater ability
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32 331 to support impactful changes to foreign healthcare systems. Discussing their personal
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34 332 experiences with the US healthcare system, one participant noted: “There are so many competing
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36 333 agendas, and it is the big money that is going to win out. I hate to sound cynical.” (PL #7,
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38 334 interview) Another participant explained that their work providing technical expertise to the
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40 335 Kenyan Health Ministry “can make public health decisions that have a big impact much more
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42 336 easily than anybody here can have.” (PL #6, interview) Several participants discussed how they
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44 337 had previously been involved in US healthcare advocacy and reform work, but had either lost
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46 338 interest, were too busy with their global health work, or had felt that they were able to bring
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48 339 about more meaningful reforms in non-US healthcare systems: “One of the things is I used to
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3 340 follow US medical care, a lot, but I can't keep up, just because I try to keep up with things going
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5 341 on overseas...I used to know a lot about this stuff." (*PL #2*, interview)
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9 10 343 **Values behind interest in global health** 11

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14 345 All interviewed participants reported that their values were not changed by their global
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16 346 health work, but rather their values drove them to pursue global health in the first place—or
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18 347 allowed them to “find a niche in which to put their values,” (*Program Leadership*, interview #2)
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20 348 as one participant noted. Furthermore, five interviewees mentioned that global health was a field
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22 349 that self-selected for individuals with altruistic values: “I think that many people who choose to
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24 350 do global health [have] ...stronger altruistic focus or willingness to devote their time.” (*Global*
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26 351 *Health Physician #1*, interview) Several participants mentioned that their values came from their
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28 352 familial upbringing, religious background, or political ideology, and that pursuing careers in
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30 353 global health was a way for them to put their values into practice.
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37 354 38 355 **DISCUSSION** 39

40 356 This exploratory study contributes to an expanded understanding of the ways in which
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42 357 global health physicians and academic global health program leaders understand their work in
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44 358 relationship to the field of global health, and the perceived impact of this work on the US
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46 359 healthcare system. Our analysis revealed that those who engage in global health work are deeply
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48 360 affected by experiences abroad, and in turn these experiences influence the way they practice
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50 361 medicine back home—even in the face of what participants perceive to be a challenging
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52 362 healthcare ecosystem. This was often described as a contradiction of values between the profit-
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3 363 driven US healthcare system and the goals of these global health physician to provide high-
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5 364 quality, attentive, culturally sensitive, and patient-centered care.

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7 365 Study participant responses reflect a shared understanding of the ways in which the US
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9 366 healthcare system treats patients as ‘paying customers’—a product of the US fee-for-service and
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11 367 for-profit healthcare model[36]—in comparison to the non-profit, universal, or single payer
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13 368 models of healthcare delivery experienced by global health physician participants while abroad.
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15 369 Participants said that the US healthcare system manifests in problematic physician-patient
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17 370 relationships, too much time devoted to bureaucratic requirements, excessive fear of litigation,
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19 371 frivolous spending, overly aggressive medical care, and a disconnect between care providers and
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21 372 the lived experiences of low-income and immigrant patients, all perspectives noted in other
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23 373 studies[35 37-39].

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25 374 Participants report that their personal values motivate them to pursue global health
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27 375 careers, a notion supported by studies on career choice selection[40] and short-term temporary
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29 376 global health residency electives[29]. They describe global health work as personally rewarding,
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31 377 a counterweight to personal frustrations resulting from the US healthcare system. Several
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33 378 participants explicitly state that global health work is a return to their altruistic values, an
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35 379 opportunity to “save lives,” or to serve regardless of cost. In contrast, they describe practicing in
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37 380 the US as prioritizing pleasing the patients and the ‘worried well’ (as opposed to healing people,
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39 381 and understanding the broader roots of affliction), practicing “insurance medicine” or “liability
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41 382 medicine”, or “customer service”. They attribute these perceptions to either the volunteer nature
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43 383 of their global health work, their experiences working in non-US healthcare systems, or
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45 384 witnessing different provider-patient relationships while abroad.

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3 385 While a broader discussion of the promise and perils of short-term global health and
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5 386 medical mission work—of which academic global health programs are just one example—is
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7 387 outside the scope of this study, it is worth reflecting briefly on some of these comments, which
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9 388 point to the problematic nature of many of these programs. The idea of escaping from the
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11 389 confines of the bureaucratic US healthcare system into a LMIC medical setting can often propel
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13 390 well-intending physicians into potentially ethically problematic global health situations. They
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15 391 may be operating outside of the laws of the ‘host’ country, and be unfamiliar with the structural
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17 392 determinants of health in this new setting; and, as a result their work might undermine local
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19 393 healthcare delivery systems. These are situations we have seen in our collective global health
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21 394 work, and about which several participants spoke during interviews.

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26 395 The most significant division amongst participants is whether they viewed their global
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28 396 health work as a vehicle for change on individual care, and/or systemic changes in the US. Those
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30 397 that did report positive benefits of global health for improved patient-care and the changes to the
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32 398 US healthcare system overall discuss these more at the individual level—such as reduced
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34 399 spending, better patient care, and replicating interventions that had proven effective abroad.
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36 400 These findings are supported by similar research looking at the perspectives of short-term global
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38 401 health residency electives[29], international clinical rotations[41], and other forms of global
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40 402 health engagement[42]. Additionally, several participants point to the role of global health
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42 403 physicians in preventing pandemics by being better prepared at recognizing new infectious
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44 404 diseases, going to the source of the outbreak, and identifying the need for the US healthcare
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46 405 system to take infectious disease threats more seriously.

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51 406 A majority of participants reported having a better understanding of the weaknesses and
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53 407 strengths of the US healthcare system as a result of their global health work. Other studies argue
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3 408 that global health experiences can serve the needs of the healthcare system by increasing the
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5 409 number of physicians who go into a primary care field and practice medicine in resource-poor
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8 410 settings[41].
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10 411 Participants who consider the impact of global health work on US patient care point to
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12 412 US national policies and the social determinants of health as being important for improving
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14 413 patient health. These narratives are supported by evidence that points to income and other
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16 414 economic inequalities as important drivers of poor population health,[43] and the realization that,
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18 415 while the US spends more money on healthcare than the rest of the world combined,[44] it
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20 416 continues to lag behind other high-income countries in life expectancy.[13] These participants
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22 417 suggest the need for domestic and foreign collective reforms to bring about significant health
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24 418 improvements.
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28 419 Our study found that global health physicians and global health program leaders do not
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30 420 feel greater agency to bring about policy or systems-level changes to the US healthcare system
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32 421 because of their global health experiences. This could be the result of a multitude of factors, such
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34 422 as an increased awareness to the obstacles that stand in the way of reform, a recognition of the
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36 423 immensity of reform required, or an understanding of the difficulty of bringing about positive
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38 424 changes in the current political context.
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44 426 **Limitations**

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47 427 The homogeneity of the research team is a notable limitation of this study, with lead
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49 428 researchers all from North America and predominantly white men, thus affecting the formulation
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51 429 of the research questions, the data received, and the analysis conducted. We reached out to 159
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53 430 individuals and programs, 30 opened the questionnaire link, and only 12 completed the
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3 431 questionnaire (7.5% response rate). The study's small sample size was most likely a result of
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5 432 physician and program leadership survey fatigue—which, the research team was told directly by
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7 433 several who declined to participate—limiting the generalizability of our findings. Future
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9 434 qualitative research on this or similar participant demographics should consider survey fatigue
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11 435 and explore ways to increase response rates, such as more in-person interviews and, if ethically
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13 436 feasible, participant observation. A more grounded research design that develops interview
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15 437 guides based on initial questionnaire responses will likely improve the scope and focus of
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17 438 participant responses, as well. While thematic saturation was not achieved, we hope that our
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19 439 identified themes can act as a starting point for future research on the topic of how global health
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21 440 work is perceived to impact US patient care. One example might be an experimental study
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23 441 investigating global health physician spending patterns compared to physicians who have not
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25 442 practiced abroad. We also feel that future research seeking to understand the growing interest in
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27 443 the global health field could investigate how perceived conflict of values between altruistically-
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29 444 driven physicians and the US healthcare system could act as a potential force in generating more
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31 445 interest in global health, and how the US healthcare system or individual institutions could
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33 446 decrease physician discontentment associated with a conflict of care values.
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448 CONCLUSIONS

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

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3 454 low socioeconomic patients, may reduce healthcare spending by providers, and may lead to more
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5 455 effective patient care. The other three identified themes were that global health work is largely
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7 456 motivated by altruistic values, leads to a greater awareness of the social determinants of health,
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10 457 and gives rise to a better understanding of the strengths and weaknesses of the US healthcare
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12 458 system. Participants saw these themes as inter-related, such as how global health work allows for
13
14 459 more personally rewarding physician–patient interactions compared to the US healthcare system,
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17 460 which was viewed as flawed, unwieldy, and obdurate, and in need of reform.
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461 STATEMENTS

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465 466 *Competing interests*

467 NMT is a student at, DC and SB are faculty members at, and DC and SH are employed part-time
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469 and DM work in partnership with a nonprofit healthcare company (Possible) that delivers free
470 healthcare in rural Nepal using funds from the Government of Nepal and other public,
471 philanthropic, and private foundation sources. BA is a faculty member at a public university
472 (University of California, San Francisco). SM and DM are faculty members at a private
473 university (Icahn School of Medicine at Mount Sinai). DM is a non-voting member on *Possible's*
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475 Open's policy on competing interests and declare that we have no competing financial interests.
476 The authors do, however, believe strongly that healthcare is a public good, not a private
477 commodity.

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483 484 *Author contributions:*

485 Conceived and designed the study: NMT, DC, SH, SB, DM

486 Collected and analyzed the data: NMT

487 Interpreted the results: NMT, DC, SH, BA, SM, SB, DM

488 Wrote the manuscript draft: NMT, DC, SH

489 Edited and revised the manuscript draft: NMT, DC, SH, BA, SM, SB, DM

490 Reviewed and approved the final manuscript draft: NMT, DC, SH, BA, SM, SB, DM

491 492 *Data sharing statement:*

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

495 496 *Ethics approval and consent to participate*

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

503 504 *Consent for publication*

505 No applicable.

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507 **Supplemental Materials**
508 Supplemental File 1: Interview Guide
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510

For peer review only

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523 [policy/poll-finding/2016-survey-of-americans-on-the-u-s-role-in-global-health/](https://www.kff.org/global-health-policy/poll-finding/2016-survey-of-americans-on-the-u-s-role-in-global-health/).
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26 626

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	<ol style="list-style-type: none"> 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	

BMJ Open

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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Keywords:	global health, learning exchange, domestic health, health equity

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Manuscripts

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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47 **ABSTRACT**

48 **Objectives**

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

52 53 **Design**

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

59 60 **Participants**

61 159 global health physicians and global health program leaders at 25 academic medical
62 institutions were invited via email to take a survey and participate in a follow-up interview.
63 Twelve participants completed online questionnaires (7.5% response rate) and eight participants
64 (four survey participants and four additionally recruited participants) participated in in-depth, in-
65 person or phone semi-structured interviews.

66 67 **Results**

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

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3 70 medical practices: 1) a sense of improved patient rapport, particularly with low-income, refugee,
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5 71 and immigrant patients, and improved and more engaged patient care; 2) reduced spending on
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7 72 healthcare services; 3) greater awareness of the social determinants of health; 4) deeper
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10 73 understanding of the United States healthcare system compared to systems in other countries;
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12 74 and 5) a reinforcement of values that initially motivated physicians to pursue work in global
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15 75 health.

16 17 76 18 19 77 **Conclusions**

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21 78 A majority of participating global health physicians and program leaders believed that
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23 79 international engagements improved patient care back in the United States. Participant responses
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25 80 relating to the five themes were contextualized by highlighting factors that simultaneously
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27 81 impinge upon their ability to provide improved patient care, such as the social determinants of
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29 82 health, and the challenges of changing United States healthcare policy.
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34 35 84 **ARTICLE SUMMARY**

36 37 85 **Strengths and limitations of this study**

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40 86 • Online questionnaires along with key informant interviews allowed for a more in-depth
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42 87 examination of physician and program leader perspectives.
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45 88 • Thematic analysis resulted in five nuanced themes that contributes to an expanded
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47 89 understanding of how global health work shapes a culture of healthcare practice back
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49 90 home in the US; offering further points for research and exploration.
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3 91 • Thematic saturation was not achieved through data analysis, as low questionnaire
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5 92 response rate and a small number of interview participants limit the generalizability of
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7 93 research findings.
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For peer review only

95 BACKGROUND

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

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

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3 118 students,[26-28] or residents.[29] But a gap remains in understanding how global health work
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5 119 influences the values and practices of US-based physicians who have worked extensively, and/or
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7 120 those who continue to work intermittently, in a global health setting, and what impacts this work
8
9 121 is perceived to have on the US communities in which these physicians return to work and live.
10
11 122 This qualitative study attempts to understand the perspectives of global health physicians and
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13 123 program leaders in academic global health on how they believe their work abroad influences
14
15 124 their viewpoints, values, and healthcare practices back home in the US.
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22 126 **METHODS**

23 127 **Participant and data collection**

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26 128 We recruited participants from two groups: global health physicians and global health
27
28 129 program leaders affiliated with academic medical institutions. We developed inclusion criteria to
29
30 130 purposively reflect diverse perspectives based on duration of global health experience and
31
32 131 positionalities within academic global health programs. We initially used convenience sampling
33
34 132 to recruit participants for the online questionnaire by first identifying academic medical
35
36 133 institutions with accredited—by the Council on Education for Public Health (CEPH) or Liaison
37
38 134 Committee on Medical Education (LCME)—global health programs through structured online
39
40 135 searches, followed by snowball sampling through colleague recommendations and purposeful
41
42 136 sampling to recruit additional interviewees. The study recruitment for the global health physician
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44
45 137 category required participants to match with the following criteria:

- 46
47 138 1. US-trained post-residency physicians currently providing patient care and/or conducting
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49 139 healthcare research, training, or mentorship (including education) for at least one month
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3 140 out of the year in a World Bank[30] defined low- or middle-income country and who are
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5 141 either:
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8 142 a. affiliated with an accredited global health program supported by an academic medical
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10 143 center, or
11
12 144 b. engaged in their work through another organization or company (e.g. an
13
14 145 international/non-governmental organization, consulting/technical assistance
15
16 146 organization, or multi/bi-lateral development agency).
17
18
19 147 2. US-trained physicians who have at least five-years of cumulative global health
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21 148 experience in a low- or middle-income country.
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25
26 150 The study recruitment criteria for global health program leadership required that participants be
27
28 151 program faculty or staff (program coordinators, administrators, and mentors) affiliated with an
29
30 152 academic medical institution offering an accredited global health program. Several selected
31
32 153 participants fit the criteria for both global health physician and global health program leadership,
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34 154 and their responses were analyzed within both categories.
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38 155 We designed the questionnaire and survey questions to elicit open-ended responses about
39
40 156 global health physicians' personal experiences researching and practicing abroad, while program
41
42 157 leaders were asked questions regarding their experiences overseeing programs and their
43
44 158 perspectives on the field more broadly (see Supplemental File 1). Participants who fell into both
45
46 159 categories were asked questions from both instruments. Recognizing the ambiguity of key
47
48 160 terminology such as global health,[31 32] we shared with participants the study's focus on
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50 161 healthcare practices in a global context prior to recruitment. The research instruments consisted
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52 162 of an online questionnaire developed and administered using a Research Electronic Data Capture
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3 163 database, comprised of open-ended questions and short response questions identifying
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5 164 demographic information.
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7
8 165 We utilized an adaptive approach to designing the semi-structured interviews[33] by
9
10 166 personalizing questions to further explore participant's expertise, positionality, and questionnaire
11
12 167 responses. Interviews were recorded, relevant portions were transcribed with structured notes,
13
14 168 and then coded (by NMT) and analyzed by hand using thematic analysis (conducted by NMT,
15
16 169 DC, SH, and SB) in relation to identified questionnaire themes.[34] We have incorporated
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18 170 researcher comments—distinguished by bracketed text within direct quotations—to provide
19
20 171 clarity to the quote based on information and context provided from the full interview. In the text
21
22 172 below, the names of all participants remain anonymous, and are cited using a notational system
23
24 173 to differentiate between global health physician and program leadership participant groups, and
25
26 174 if the quote comes from an interview or questionnaire; for example, (*Global Health Physician*
27
28 175 #1, *interview* [GHP, hereafter]), or *Program Leadership* #3, questionnaire [PL, hereafter]).
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33 176

35 177 **Ethics, consent, and permissions**

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38 178 This study received exemption through the Human Subjects Division, University of
39
40 179 Washington's Ethical Review Board (00000104) and the Brigham and Women's Hospital
41
42 180 Institutional Review Board (2016P000365/BWH). Participants were informed of the study
43
44 181 objectives using an electronic information sheet as part of the initial questionnaire and electronic
45
46 182 online consent was obtained before beginning any research procedures. Participants who were
47
48 183 invited for interviews also gave additional verbal or written informed consent.
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52 185 **Patient and public involvement**

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3 186 Neither patients nor the general public were directly involved in the study design, data
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5 187 collection, or analysis. The underlying research question was informed by a gap in the literature
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7
8 188 on understanding the impact that global health physicians have on domestic healthcare practices
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10 189 in the US. We hope that these results will inform future research designs that explore these
11
12 190 themes in-depth, and connect them with patient-centered outcomes research and other forms of
13
14 191 community-based participatory research. We plan to pursue further dissemination of the results
15
16 192 to the public and will consider strategies to engage the public.
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20 21 194 **RESULTS**

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24 195 We sent 159 recruitment emails to global health physicians and global health program
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26 196 leaders at 25 different academic medical institutions. Eight global health physicians and four
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28 197 global health program leaders completed the online questionnaire, while one global health
29
30 198 physician and three global health program leaders who completed the questionnaire agreed to
31
32 199 participate in a semi-structured interview. In addition, we conducted semi-structured interviews
33
34
35 200 with six global health physicians and two global health program leaders who were identified
36
37 201 through snowball and purposeful sampling. In total, participants represented seven unique
38
39 202 academic medical institutions located throughout the US and ranged from 33 to 68 years of age.
40
41
42 203 Four participants reported beginning their global health work in the 2000s, two reported
43
44 204 beginning in the 1990s, and one each reported beginning in the 1980s and 1970s. We were
45
46 205 unable to identify differences between program leaders and global health physician responses,
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48 206 likely a result of several participants falling into both categories, and similar motivations for
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50 207 participants in each category. We present in Table 1 the domains of engagement in global health
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208 for these participants and the emergent themes identified through analysis of the qualitative data
 209 in Table 2.

210

211 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

212

213 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.

214

215 **Improved and more engaged patient rapport & patient care**

216 All eight of the interviewed participants indicated that their global health work had

217 improved their ability to build rapport with and provide care for immigrant, refugee, and low-

1
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3 218 income individuals in the US. They attributed perceived improved patient rapport to a variety of
4
5 219 reasons, such as being able to speak to patients in their own language, understand their cultural
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7 220 background, and better understand the challenges unique to immigrant, refugee, and patients of
8
9 221 low socioeconomic position. As one participant noted, “If I bring some of these things up, then I
10
11 222 break a barrier and have a good relationship very quickly.” (*GHP #1*, interview) Another
12
13 223 participant discussed similar experiences that have helped them build rapport in the emergency
14
15 224 department where they work: “I speak a couple languages which working abroad has taught me.
16
17 225 I speak Spanish, I speak Creole, so...[with some patients] there is that automatic connection.”
18
19 226 (*GHP #3*, interview) Several participants remarked during interviews and in questionnaire
20
21 227 responses that patient rapport is vital to the work of caring for patients, and that learning to speak
22
23 228 another language was a direct result of their global health work.

24
25
26 229 Half of participants reported that their global health work improved the quality of care
27
28 230 they were able provide to their patients back home. Participants reported this as being “more
29
30 231 efficient” as a result of taking better patient histories and physical exams, that they were less
31
32 232 inclined to carry out “unnecessary and invasive tests,” or being more patient-centered[35] as they
33
34 233 had a greater awareness to patient’s economic and/or cultural context. One participant reported
35
36 234 that they were “more likely to speak to a patient about options that did not include very
37
38 235 aggressive care,” and that they may be “a little more comfortable” offering to “do nothing.” (*PL*
39
40 236 #6, interview) The following participant quote also exemplifies this theme:

41
42 237 Each time I practice abroad and then come back to the US, I find that I am more
43
44 238 compassionate and empathetic, because I have been practicing how to focus on the
45
46 239 person in front of me while I was away, and to think clinically (instead of focusing on the
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48 240 computer and the paperwork. (*GHP #4*, questionnaire)
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242 Several participants doubted whether these improvements in patient care were significant and
243 questioned whether they could be accurately measured. “I don't feel that physician experience
244 abroad translates into worsened quality of patient care in the U.S. I can't assume that it translates
245 into improved quality of patient care in the U.S either.” (*GHP #3*, questionnaire)

246

247 **Reduced healthcare spending**

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

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

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

264

265 **The social determinants of health and the limits of healthcare**

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

1
2
3 268 challenges of accessing healthcare. This was reported as either reinforcing participant's prior
4
5 269 perspectives on the social determinants of health or as helping participants to recognize the social
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7
8 270 and political-economic factors related to health both abroad and in the US. One global health
9
10 271 physician working in internal medicine responded that their work abroad led to a broader sense
11
12 272 of why their patients are "how they are, so it is not just they are uneducated, it is also their father
13
14 273 is an alcoholic and also that they are addicted to pain pills, and also that they are overweight."
15
16 274 Here global health work "helps you connect the dots between seemingly unconnected
17
18 275 psychosocial things" (*GHP #3*, interview). This participant located this thinking within the social
19
20 276 determinants of health more broadly: "Poverty, corruption, gender inequality, lack of education,
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22 277 years of war and the subsequent post-traumatic stress disorder that affects an entire nation all are
23
24 278 the biggest influencers of well-being." (*GHP #3*, questionnaire)

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28 279 Several participants discussed the distinction between healthcare and health, often in the
29
30 280 context of doubting the extent to which global health physicians could, themselves, improve
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32 281 health through providing healthcare in the US or abroad. As one participant wrote,

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35 282 My experience working abroad has strengthened my belief that 'well-being' (or 'health' as
36
37 283 defined by the World Health Organization) is very minimally influenced by the medical
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39 284 care I provide as an individual physician and also minimally influenced by the medical
40
41 285 care provided by a healthcare system. (*GHP #3*, questionnaire)

42
43 287 These participants advocated for a more nuanced understanding of the factors that influence
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45 288 health and felt that their global health work either brought them to this realization or reaffirmed
46
47 289 their understandings of the social determinants of health.

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49 50 291 **Rethinking the United States healthcare system**

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53 292 Seven out of the eight interview participants acknowledged the importance of their global
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55 293 health work in helping to better understand the strengths and weaknesses of the US healthcare

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3 294 system. This was attributed to a variety of factors unique to the field of global health, such as
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5 295 conversations with non-US healthcare practitioner counterparts and experience working within
6
7 296 non-US healthcare systems, as these two responses reveal: “I have had a lot of conversations
8
9 297 with colleagues in Ukraine, because they are undergoing a lot of reform...we have a lot of talks
10
11 298 about the kind of differences, weakness in each [Ukraine and US healthcare systems] and what is
12
13 299 similar.” (PL #7, interview) “Having the experience of working in many different healthcare
14
15 300 systems... allows you to see in every variety and every system there are things that work well and
16
17 301 things that do not.” (PL #6, interview) Participants framed these comparisons on the weaknesses
18
19 302 of the US healthcare system by discussing the motivations and standard practices of other
20
21 303 healthcare systems. As one participant noted during an interview, “The goal of many countries’
22
23 304 healthcare system is to serve their citizens fully... They start off in a different place than where
24
25 305 we are.” (PL #7, interview)

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31 306 Participants also contrasted the cultural role of healthcare in various settings. These
32
33 307 discussions were focused on perceived changes or shortcomings in US healthcare practices that
34
35 308 negatively affected patient care, as well as physician satisfaction and prestige. One participant
36
37 309 noted that they “do not get the experience of saving lives in the US” and “I do not get the same
38
39 310 level of gratitude from the patients.” (GHP #3, interview) This perspective was reiterated by
40
41 311 another participant who discussed how they and other physicians “look nostalgically to a time
42
43 312 when there was more enthusiasm for the work that physicians did”; though, they “try to keep the
44
45 313 dissatisfying thoughts at bay.” This was attributed to them spending “a lot of time doing
46
47 314 paperwork, less time doing patient interaction or [having] meaningful patient interaction.” (PL
48
49 315 #6, interview) The following participant quote exemplifies how participants framed their

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2
3 316 perceptions of the US healthcare system. They perceived a decline in the US healthcare system
4
5 317 and that global health work was seen as a more personally beneficial and altruistic endeavor:
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7 318 “We do not practice evidence-based medicine anymore [in the US], we practice lawsuit- based
8
9 319 and insurance-based medicine now. I am a hired gun here. I collect a paycheck and then go back
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11 [abroad].” (*GHP #3*, interview)
12 320

13
14 321 Several interview participants identified current and future potential challenges of
15
16 322 infectious disease epidemics to the US healthcare system, and the perceived benefits of global
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18 323 health work in primary, secondary, and tertiary prevention. One participant noted, “If we are not
19
20 324 prepared to fight that pandemic, like Ebola or Severe Acute Respiratory Syndrome, in the place
21
22 325 where it starts then that will eventually come to anybody anywhere in the world.” (*PL #6*,
23
24 326 interview) Another participant discussed epidemics and the perceived benefits of global health
25
26 327 work to infectious disease control: “I see a lot of infections when I’m overseas that then
27
28 328 periodically show up here and I think I’m one of the few people that could actually like deal with
29
30 [it]. So, it informs the technical aspect of my job.” (*PL #6*, interview)
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32
33 330 One of the primary research questions was whether a greater recognition of the strengths
34
35 331 and weakness of the US healthcare system could lead to a culture of change amongst global
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37 332 health physicians in their US sites of practice. The participants responded in a variety of ways –
38
39 333 most of which contained elements of doubt, cynicism, disinterest, or a perceived greater ability
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41 334 to support impactful changes to foreign healthcare systems. Discussing their personal
42
43 335 experiences with the US healthcare system, one participant noted: “There are so many competing
44
45 336 agendas, and it is the big money that is going to win out. I hate to sound cynical.” (*PL #7*,
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47 337 interview) Another participant explained that their work providing technical expertise to the
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49 338 Kenyan Health Ministry “can make public health decisions that have a big impact much more
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3 339 easily than anybody here can have.” (PL #6, interview) Several participants discussed how they
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5 340 had previously been involved in US healthcare advocacy and reform work, but had either lost
6
7 341 interest, were too busy with their global health work, or had felt that they were able to bring
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9 342 about more meaningful reforms in non-US healthcare systems: “One of the things is I used to
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11 343 follow US medical care, a lot, but I can’t keep up, just because I try to keep up with things going
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13 344 on overseas...I used to know a lot about this stuff.” (PL #2, interview)
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19 346 **Values behind interest in global health**

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24 348 All interviewed participants reported that their values were not changed by their global
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26 349 health work, but rather their values drove them to pursue global health in the first place—or
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28 350 allowed them to “find a niche in which to put their values,” (PL #2, interview) as one participant
29
30 351 noted. Furthermore, five interviewees mentioned that global health was a field that self-selected
31
32 352 for individuals with altruistic values: “I think that many people who choose to do global health
33
34 353 [have] ...stronger altruistic focus or willingness to devote their time.” (GH #1, interview) Several
35
36 354 participants mentioned that their values came from their familial upbringing, religious
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38 355 background, or political ideology, and that pursuing careers in global health was a way for them
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40 356 to put their values into practice.
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46 47 358 **DISCUSSION**

48
49 359 This exploratory study contributes to an expanded understanding of the ways in which
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51 360 global health physicians and academic global health program leaders understand their work in
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53 361 relationship to the field of global health, and the perceived impact of this work on the US
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3 362 healthcare system. Our analysis revealed that those who engage in global health work are deeply
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5 363 affected by experiences abroad, and in turn these experiences influence the way they practice
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7 364 medicine back home—even in the face of what participants perceive to be a challenging
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10 365 healthcare ecosystem. This was often described as a contradiction of values between the profit-
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12 366 driven US healthcare system and the goals of these global health physician to provide high-
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15 367 quality, attentive, culturally sensitive, and patient-centered care.

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17 368 Study participant responses reflect a shared understanding of the ways in which the US
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19 369 healthcare system treats patients as ‘paying customers’—a product of the US fee-for-service and
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21 370 for-profit healthcare model[36]—in comparison to the non-profit, universal, or single payer
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23 371 models of healthcare delivery experienced by global health physician participants while abroad.
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26 372 Participants said that the US healthcare system manifests in problematic physician-patient
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28 373 relationships, too much time devoted to bureaucratic requirements, excessive fear of litigation,
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30 374 frivolous spending, overly aggressive medical care, and a disconnect between care providers and
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32 375 the lived experiences of low-income and immigrant patients, all perspectives noted in other
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34 376 studies[35 37-39].

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36
37 377 Participants report that their personal values motivate them to pursue global health
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39 378 careers, a notion supported by studies on career choice selection[40] and short-term temporary
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41 379 global health residency electives[29]. They describe global health work as personally rewarding,
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43 380 a counterweight to personal frustrations resulting from the US healthcare system. Several
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45 381 participants explicitly state that global health work is a return to their altruistic values, an
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47 382 opportunity to “save lives,” or to serve regardless of cost. In contrast, they describe practicing in
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49 383 the US as prioritizing pleasing the patients and the ‘worried well’ (as opposed to healing people,
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51 384 and understanding the broader roots of affliction), practicing “insurance medicine” or “liability
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3 385 medicine”, or “customer service”. They attribute these perceptions to either the volunteer nature
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5 386 of their global health work, their experiences working in non-US healthcare systems, or
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7 387 witnessing different provider-patient relationships while abroad.
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10 388 While a broader discussion of the promise and perils of short-term global health and
11
12 389 medical mission work—of which academic global health programs are just one example—is
13
14 390 outside the scope of this study, it is worth reflecting briefly on some of these comments, which
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16 391 point to the problematic nature of many of these programs. The idea of escaping from the
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18 392 confines of the bureaucratic US healthcare system into a LMIC medical setting can often propel
19
20 393 well-intending physicians into potentially ethically problematic global health situations. They
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22 394 may be operating outside of the laws of the ‘host’ country, and be unfamiliar with the structural
23
24 395 determinants of health in this new setting; and, as a result their work might undermine local
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26 396 healthcare delivery systems. These are situations we have seen in our collective global health
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28 397 work, and about which several participants spoke during interviews.
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33 398 The most significant division amongst participants is whether they viewed their global
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35 399 health work as a vehicle for change on individual care, and/or systemic changes in the US. Those
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37 400 that did report positive benefits of global health for improved patient-care and the changes to the
38
39 401 US healthcare system overall discuss these more at the individual level—such as reduced
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41 402 spending, better patient care, and replicating interventions that had proven effective abroad.
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43 403 These findings are supported by similar research looking at the perspectives of short-term global
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45 404 health residency electives[29], international clinical rotations[41], and other forms of global
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47 405 health engagement[42]. Additionally, several participants point to the role of global health
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49 406 physicians in preventing pandemics by being better prepared at recognizing new infectious
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3 407 diseases, going to the source of the outbreak, and identifying the need for the US healthcare
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5 408 system to take infectious disease threats more seriously.
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8 409 A majority of participants reported having a better understanding of the weaknesses and
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10 410 strengths of the US healthcare system as a result of their global health work. Other studies argue
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12 411 that global health experiences can serve the needs of the healthcare system by increasing the
13
14 412 number of physicians who go into a primary care field and practice medicine in resource-poor
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16 413 settings[41].
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19 414 Participants who consider the impact of global health work on US patient care point to
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21 415 US national policies and the social determinants of health as being important for improving
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23 416 patient health. These narratives are supported by evidence that points to income and other
24
25 417 economic inequalities as important drivers of poor population health,[43] and the realization that,
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27 418 while the US spends more money on healthcare than the rest of the world combined,[44] it
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29 419 continues to lag behind other high-income countries in life expectancy.[13] These participants
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31 420 suggest the need for domestic and foreign collective reforms to bring about significant health
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33 421 improvements.
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37 422 Our study found that global health physicians and global health program leaders do not
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39 423 feel greater agency to bring about policy or systems-level changes to the US healthcare system
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41 424 because of their global health experiences. This could be the result of a multitude of factors, such
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43 425 as an increased awareness to the obstacles that stand in the way of reform, a recognition of the
44
45 426 immensity of reform required, or an understanding of the difficulty of bringing about positive
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47 427 changes in the current political context.
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52 53 429 **Limitations**

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3 430 The homogeneity of the research team is a notable limitation of this study, with lead
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5 431 researchers all from North America and predominantly white men, thus affecting the formulation
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7 432 of the research questions, the data received, and the analysis conducted. We reached out to 159
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9 433 individuals and programs, 30 opened the questionnaire link, and only 12 completed the
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11 434 questionnaire (7.5% response rate). The study's small sample size was most likely a result of
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13 435 physician and program leadership survey fatigue—which, the research team was told directly by
14
15 436 several who declined to participate—limiting the generalizability of our findings. Future
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17 437 qualitative research on this or similar participant demographics should consider survey fatigue
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19 438 and explore ways to increase response rates, such as more in-person interviews and, if ethically
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21 439 feasible, participant observation. A more grounded research design that develops interview
22
23 440 guides based on initial questionnaire responses will likely improve the scope and focus of
24
25 441 participant responses, as well. While thematic saturation was not achieved, we hope that our
26
27 442 identified themes can act as a starting point for future research on the topic of how global health
28
29 443 work is perceived to impact US patient care. One example might be an experimental study
30
31 444 investigating global health physician spending patterns compared to physicians who have not
32
33 445 practiced abroad. We also feel that future research seeking to understand the growing interest in
34
35 446 the global health field could investigate how perceived conflict of values between altruistically-
36
37 447 driven physicians and the US healthcare system could act as a potential force in generating more
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39 448 interest in global health, and how the US healthcare system or individual institutions could
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41 449 decrease physician discontentment associated with a conflict of care values.
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51 451 CONCLUSIONS

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3 452 This exploratory qualitative study only begins to scratch the surface of understanding the
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5 453 impact of global health work on US patient care and the US healthcare system. Among the five
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7 454 themes identified through questionnaires and interviews with global health physicians and global
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9 455 health program leaders, two themes were centered on the impact of global health work on US
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11 456 patient care: global health may improve patient rapport for physicians caring for immigrant and
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13 457 low socioeconomic patients, may reduce healthcare spending by providers, and may lead to more
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15 458 effective patient care. The other three identified themes were that global health work is largely
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17 459 motivated by altruistic values, leads to a greater awareness of the social determinants of health,
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19 460 and gives rise to a better understanding of the strengths and weaknesses of the US healthcare
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21 461 system. Participants saw these themes as inter-related, such as how global health work allows for
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23 462 more personally rewarding physician–patient interactions compared to the US healthcare system,
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25 463 which was viewed as flawed, unwieldy, and obdurate, and in need of reform.
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464 STATEMENTS

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468

469 *Competing interests*

470 NMT is a student at, DC and SB are faculty members at, and DC and SH are employed part-time
471 at a public university (University of Washington). DC and SH are employed by, and BA, SM,
472 and DM work in partnership with a nonprofit healthcare company (Possible) that delivers free
473 healthcare in rural Nepal using funds from the Government of Nepal and other public,
474 philanthropic, and private foundation sources. BA is a faculty member at a public university
475 (University of California, San Francisco). SM and DM are faculty members at a private
476 university (Icahn School of Medicine at Mount Sinai). DM is a non-voting member on *Possible's*
477 board of directors but receives no compensation. All authors have read and understood BMJ
478 Open's policy on competing interests and declare that we have no competing financial interests.
479 The authors do, however, believe strongly that healthcare is a public good, not a private
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486

487 *Author contributions:*

488 Conceived and designed the study: NMT, DC, SH, SB, DM

489 Collected and analyzed the data: NMT

490 Interpreted the results: NMT, DC, SH, BA, SM, SB, DM

491 Wrote the manuscript draft: NMT, DC, SH

492 Edited and revised the manuscript draft: NMT, DC, SH, BA, SM, SB, DM

493 Reviewed and approved the final manuscript draft: NMT, DC, SH, BA, SM, SB, DM

494

495 *Data sharing statement:*

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

498

499 *Ethics approval and consent to participate*

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

506

507 *Consent for publication*

508 No applicable.

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510 **Supplemental Materials**
511 Supplemental File 1: Interview Guide
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For peer review only

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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	<ol style="list-style-type: none"> 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

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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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