Trainee Safety in Global Health

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Global health, in its many permutations (tropical medicine and hygiene, international health, and international public health), has long been a valued realm of the health professions. Over the last decade there has been a dramatic increase in interest among health professional trainees in global health training as well as a flurry of new global health training programs arising at academic institutions throughout North America. Factors behind this trend include globalization, increasing migration, greater consciousness of the socio-political determinants of health, as well as a major increase in philanthropic support for global health. In addition, natural and man-made catastrophes such as the earthquake in Haiti in 2010 have led to calls for universal training in global health and disaster medical relief.

There certainly is an interest, but is there truly a need? The answer is yes, in part because of the serious health workforce crisis in developing countries. Based on a WHO February 2008 report, there are 4.25 million health workers needed to fill the workforce shortage in the world's most vulnerable and resource-poor nations. This means there is inadequate coverage for even simple life-saving services such as immunizations and basic maternal and child health care.¹ Medical migration, or "brain drain", is an important factor behind the crisis and has been shown to worsen health disparities.^{2,3} Brain drain not only results in less provision of health services, it also means wasted investment in education and the loss of supervisors and mentors for health professional students. The aggregate effect is staggering. For example, just the "economic loss incurred by African countries as a result of emigration of one doctor [is] about US\$1,854,677 and one nurse [is] US\$1,213,463".⁴

The combination of interest in and need for global health work led to a 2009 Institute of Medicine report that recommended increased involvement of the US government, non-governmental organizations, and academic institutions in capacity building, scale-up of proven interventions, and research in resource-poor settings.⁵ Some have argued that all medical students need global health curricula and opportunities to work in resource-limited settings abroad in order to address inequities in health care.⁶

Research has shown that international experiences are tremendously formative for health professional students.^{7–10} They result in increased cross-cultural sensitivity, increased proficiency with the physical exam, decreased reliance on

expensive testing, and increased commitment to underserved populations. The availability of an international rotation has also been shown to influence students' career selection.¹¹

The arguments for global health education programs are convincing, but how can we strengthen these programs? Specific approaches include integration of global health into core medical curricula, increased funding for trainees to go abroad, and formalized sites for international training opportunities.¹² Additionally, the global health community has refocused its work to decrease the unintended consequences of international work on host communities. Strengthening partnerships with host country institutions, integration of global programs into local ministries of health, and formal programs in capacity building have helped decrease dependence on international workers as well as decrease the risk of medical migration. Needs assessments and community-based participatory research strategies have increasingly ensured that research truly reflects local needs rather than Northern agendas. However, one topic that remains relatively neglected is the unintended consequences of international programs for trainees.

The article by Gardner et al. in this issue of JGIM is a good step forward in exploring these consequences.¹³ They specifically evaluated the risk of TB skin test conversion in trainees who traveled and worked in Eldoret, Kenya. The AMPATH program is well established and sends more than 300 trainees to the Kenyan site per year. Consider that even in a well-organized and established program, only 27% of participants in the study had ideal care which includes pre-travel TB skin testing, pre-departure counseling, post-return counseling, and post-return TB skin testing. In addition, of the study participants at risk for skin test conversion, 4% had conversion when appropriately tested upon return. Interestingly, they did not find an association between conversion and length of stay or type of work (clinical vs. non-clinical), suggesting that prevention counseling for clinical trainees alone may not be adequate. With increasing rates of TB worldwide and the emergence of highly resistant tuberculosis strains, the impact of TB conversion, especially if undetected, is likely to have consequences that extend beyond the health impact on the individual trainee.

As the authors point out, there are some guidelines available from the Centers for Disease Control with regards to TB skin testing for international travelers. There are similar guidelines available for malaria prophylaxis and recommended immunizations. There is also increasing consensus for universal precautions and post-exposure prophylaxis for blood-borne pathogens such as HIV. However, there remain several significant barriers to adequate prevention and counseling for trainees.

First, many trainees travel to less organized and established sites and without formal global health training prior to departure.

At these sites they may have inadequate supervision and mentorship and may lack knowledge of infectious disease exposure risk and prevention techniques. This issue has far-reaching ethical consequences beyond just the health and safety of trainees. For example, trainees without adequate supervision may perform medical procedures even when underqualified. They may feel that they are the only provider available, thus better than no provider, leading to inappropriate diagnosis and care.¹⁴

Second, global health programs, like many academic medical education programs, are running on a tight budget. This means that there is inadequate staff to prepare trainees individually before departure and track them to ensure complete testing and counseling when they return. Asynchronous learning modules and automation of tracking may help reduce these human resource needs in the future.

Third, for many of the physical and mental health consequences of international work, there are no well established guidelines. Vehicular trauma may be the leading cause of major morbidity for trainees abroad, just as it is for travelers in general. The countries with the greatest health needs are often among the least safe for driving. Appropriate pre-departure counseling on strict avoidance of unsafe forms of transportation (e.g. motorcycles) or travel on dangerous roads as well as the provision of resources to use safer (and more costly) forms of transportation may reduce the risk. At this time, however, there are no standard operating procedures for improving motor vehicle safety for trainees. Another important issue is depression, which is more common in medical students and residents than in the general population.^{15,16} The impact of seeing, sometimes for the first time, severe health disparities and extreme poverty and the feeling of helplessness experienced by some trainees working abroad may exacerbate or unmask symptoms of depression. Finally, there are few guidelines for counseling trainees to respond appropriately in settings of unexpected personal, sexual, or political violence.

As we scale up global health training programs to respond to the needs of underserved communities throughout the world, it will serve us well to slow down for a moment and address the health and safety concerns of our trainees in a systematic and integrative fashion. Organizations such as the American Public Health Association, the Global Health Education Consortium, and The Consortium of Universities for Global Health, as well as individual researchers, program directors, and already well established programs should work together to come to consensus about the best way to counsel our trainees, track their experiences, and respond to their physical and mental health needs. Innovative educational technology, the current collaborative nature of global health programs, and continued research on the health consequences of global health work will help us establish a

high standard of safety for trainees who venture to do meaningful work around the world.

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