#### ORIGINAL RESEARCH

# **Ethical Considerations of Physician Career Involvement in Global Health Work: A Framework**

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Abstract Examining the ethics of long-term, career involvement by physicians in global health work is vital, given growing professional interest and potential health implications for communities abroad. However, current literature remains heavily focused on ethical considerations of short-term global health training experiences. A literature review informed our development of an ethics framework centered on two perspectives: the practitioner perspective, further subdivided into extrinsic and intrinsic factors, and community perspectives, specifically that of the host community and the physician's home community. Some physician factors included cultural/linguistic differences, power imbalances, and sustainable skills/competencies. Receiving community factors included resource limitations, standard of care disparities, and community autonomy. Home

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D. S. Rhee Johns Hopkins Hospital, 1800 Orleans St, Baltimore, MD 21287, USA community factors focused on the opportunity cost of an unavailable physician who was trained and supported by the local community. Descriptive review permitted comparison with existing short-term literature, noting similarities and differences. Our framework provides a basis for further research and critical analysis of ethical implications of career-long physician global health work.

**Keywords** Medical ethics · World health · Career choice · International cooperation

#### Introduction

Engagement in global health among young physicians from high-income countries has fueled growing interest in work opportunities abroad. Initial experiences in short-term educational and service endeavors often give rise to the incorporation of work abroad in the long-term career plans of many physicians (Bauer and Sanders 2009). Global health ethics literature has developed in parallel. However, extant literature has been informed largely by short-term endeavors, commonly educational or service opportunities, single research projects, or emergency and disaster relief efforts, with limited examination of long-term career involvement. For the purposes of this paper, we define long-term involvement in global health as work of a full-time or recurrent nature (e.g., annually for greater than three months), undertaken by a physician from a high-income country in one or

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more low-income settings, and involving the provision of care, research, or teaching and training activities.

Many studies have described the desire of young physicians to participate in work abroad over the course of their careers (Bauer and Sanders 2009; Wilson, Merry, and Franz 2012; Chiller, De Mieri, and Cohen 1995; Ramsey et al. 2004). Some of the underlying values and ethical principles of long-standing work abroad draw on similar precepts that guide short-term endeavors, including sustainability, social justice, and humility (Friedman, Loh, and Evert 2014). However, long-term work may more dramatically magnify potential ethical quandaries and outcomes for physicians, home communities, and the patients they serve.

Using a definition of "global health work" to mean efforts undertaken by physicians either part-time or fulltime over their professional lives, our review aims to incorporate existing literature to create a framework of essential ethical considerations. The current paper then tailors and extrapolates this framework based on shortterm settings to the unique aspects of longer-term career global health, including the potential harms and benefits. We aim to promote a deeper understanding of the ethical dilemmas arising from physician career participation in global health and call for further research on this subject.

#### **Current Context: Short-Term Global Health Ethics**

Given the wide variety of global health work undertaken by physicians, existing global health literature is predicated on a number of interwoven ethical disciplines, including clinical ethics, research ethics, institutional ethics, and public health ethics (Hunt 2009; Redwood-Campbell et al. 2007). Present short-term global health frameworks often broadly encompass aspects of each discipline, depending on the nature of the work undertaken.

Traditional clinical ethics oversees practice abroad by physicians and trainees, who often participate in shortterm experiences providing clinical care in a country other than their own. Common ethical issues that arise from such care can include screening without available treatment, inappropriate practitioner training and skill sets, power imbalances between host and visiting staff, and cultural sensitivities (Pinto and Upshur 2009; Hunt 2009). Research ethics is applied to research abroad, with the overarching goal of conducting appropriate and ethical research. Global health literature describes specific considerations related to the immense vulnerability of research participants related to power imbalances, which is compounded by the strength and influence of local laws, cultural beliefs, and societal and institutional norms and structures (Lairumbi et al. 2011, 2012).

Institutional ethics applies to both sending and receiving institutions of short-term global health experiences. Sending institutions, typically from high-income countries, are often bound by internal codes of conduct and external or international declarations, such as the Alma-Ata Declaration, which issued a moral appeal for institutional investment in global health and primary care efforts (Eyelade, Ajuwon, and Adebamowo 2011; WHO 1978). Similarly, they are bound by laws in the country in which they are headquartered, which often govern disclosure requirements, fund-raising, and allocation of funds and resources.

Receiving institutions are bound by similar ethical considerations, along with additional concerns, including resource constraints that can pit institutional support for global health initiatives against potential benefits and harms to faculty, learners, and patients (Lairumbi et al. 2008). Conflicts of interest may emerge given the prestige associated with international affiliations between scholars from receiving institutions and Western academic institutions, as well as equitable benefit-sharing between sending and receiving institutions (Lairumbi et al. 2011, 2012).

Public health ethics also overlays work abroad, given the historically significant role of public health interventions in global health and development. Typical considerations arise from traditional public health ethics, which balances conflicts between individual needs and the greater good of the population; issues around priority-setting (e.g., stove-piping of resources) (Schieber et al. 2007; Ravishankar et al. 2009); involvement of community leadership, beliefs, or convention versus evidence-informed decisions (Rudan et al. 2010); and the equitable distribution of resources.

Finally, traditional bioethical guidelines also provide an initial framework for decision-making surrounding motivations for career involvement by physicians. While the values of beneficence and justice, for example, may rationalize the pursuit of work abroad by physicians from high-income countries, nonmaleficence reminds scholars of the full range of consequences of seemingly beneficent actions, irrespective of intentions. Any ethical framework discussing long-term involvement by physicians in global health work abroad will need to extend beyond this simple axis around motivations to incorporate the wider considerations of clinical, research, institutional, and public health ethics.

#### Comparison: Considerations in Career-Involvement Versus Short-Term Work Abroad

The very characteristics of populations that create global health needs and compel individuals to pursue careers working abroad have the potential to generate ethical dilemmas in practice (Pinto and Upshur 2009). For example, power imbalances inherent in the relationship between visiting physicians and potentially marginalized, impoverished populations in low- and middle-income countries make such patients particularly vulnerable to exploitation (Pinto and Upshur 2009). As a result, the potential consequences for the receiving community may be of significantly greater magnitude from long-term career involvement compared with short-term involvement, and thus differentiating the ethical considerations between the two is imperative.

Key differences between the ethical challenges of long-term global health work compared with shortterm experiences include the compounding nature of time on initial harms and ethical concerns, the constant flux in which considerations change and reprioritize over time, and the effects of not practicing in one's home community.

The first difference highlights that global health careers bear out ethical concerns over a longer period of time. Specific ethical issues that are not addressed early are thus compounded. For example, initial skills that are inadequate to serve low- and middle-income countries' needs may lead to improper learning and habituation of incorrect approaches or practices. Best intentions and a belief that "any help is better than no help" also may lead to an inappropriate approach being implemented repeatedly, compounding resultant harms. Conversely, a growing familiarity and acculturation with the local community through a longitudinal relationship, along with improved ethical and global health acumen, could contribute to reduced detriment in the long-term. The existence of either possibility demonstrates the challenge of forecasting long-term outcomes as compared with those of a single short-term experience.

Nonmaleficence similarly remains an important ethical principle. The appreciation of receiving any care at all, particularly at no or low cost, as well as the significant respect accorded to physicians in many cultures make objective assessment by host communities or institutions difficult in the context of global health careers (Hunt 2009). Additionally, low- and middle-income country settings may be less conducive to feedback, given competing priorities and also that rigorous evaluation may not be culturally appropriate. The potential compromise in ability to identify and correct substandard practices can affect the legitimacy of resources spent "serving" these communities. Consequences can include lack of benefit or even harm to these populations; furthermore, should errors ultimately come to light, a loss of community trust and goodwill could impede future global health efforts (Sirriyeh et al. 2010).

Ethical considerations can change over the long trajectory of a global health career. Take, for example, a community that develops dramatically over decades of working with clinicians, researchers, and development agencies from abroad. The primary concerns may evolve from power imbalances and resource distribution to questioning the need for a foreign presence in that community. Project sustainability, in a similar vein, weighs the value of greater local ownership versus resource intensification (Le Loup et al. 2010).

For individuals, priorities, motivations, and values often change over the course of a career. This, in turn, can affect overall work and career trajectory as well as the ethical considerations surrounding one's decisions. For example, a physician serving a community abroad for an extended period of time faces an ethical dilemma in any decision to withdraw care and go to another community or to return home, as one's long-standing work within a community allows one to more effectively serve a community compared with a newcomer. However, how much sacrifice of personal priorities can be expected to continue to provide that benefit? Furthermore, if one's interests lie in returning home, would conflicting feelings affect overall work performance (Gonzalez 2012)? And in considering the receiving community, is some benefit at the cost of provider satisfaction better than no benefit at all?

The issue of work at home versus work abroad ties into a third way in which global health career ethics varies from those of short-term work. The decision to forgo work at home in favor of pursuing full- or parttime work abroad has implications for the practitioner's home community. Short-term career ethics usually considers the nature of experience abroad as generally positive for the home community, given the improved clinical skills, broadened cultural sensitivity, and increased altruism experienced by participants (Thompson et al. 2003). Studies have shown that participation in shortterm experiences increases the probability that a young physician will choose a specialty in primary care or work with populations of a lower socioeconomic status (Bauer and Sanders 2009; Provenzano et al. 2010; Smith and Weaver 2006).

Conversely, participation in long-term global health work may be at a significant opportunity cost for the practitioner's home community. Since home communities support physician education and training, one must weigh the potential responsibility and moral debt owed to one's home community against the ability and desire to work with populations abroad. Although the decision to pursue global health work can indirectly benefit one's home country by fostering goodwill and intercultural understanding, it also runs the risk of perpetuating stereotypes within the physician community about lowincome settings and communities. Further exploration into these considerations for home communities, for both short- and long-term involvement, will be increasingly critical.

# A Proposed Ethical Framework for Career Involvement by Physicians in Global Health

Given the notable differences between short-term global health efforts and long-term global health careers, Figure 1 outlines a proposed ethical framework to guide practitioners in considering global health careers.

Our review led us to divide potential ethical considerations into two categories: practice considerations, further divided into intrinsic and extrinsic factors, and community considerations, divided into receiving community and home community factors. The resulting categorizations allow for systematic identification of potential issues related to global health careers that could result in ethical dilemmas.

#### Practice Considerations: Intrinsic

Ethical considerations intrinsic to global health practitioners are related to their personal or professional constitution. Most commonly considered are skills and abilities; many practitioners from high-income countries arrive highly motivated but often with limited knowledge of how to practice in resource-limited settings. Clinicians often need to adapt their abilities to diagnose and treat using outdated or limited resources and technology (Pirkle, Dumont, and Zunzunegui 2012; Hofmeyr et al. 2009). Researchers may compromise usual standards resulting in less exact or less transparent study methods (Blanchard-Horan et al. 2012). Public health practitioners are often faced with resource and budget decisions that seem unethical regardless of how resources are allocated (Easterbrook, Sands, and Harmanci 2012).

Ethical quandaries do not arise solely from a practitioner's inability to manage limited resources. In considering long-term careers, the fit and adaptability of the practitioner is also of concern. The ability of practitioners to adapt to various settings results in differential skill development. Over time, this ultimately leads to variation in practitioner skills. Those who are less able to work with ongoing limitations may diminish their ultimate benefit to the local community.

Numerous other intrinsic considerations relate to the ethics of careers abroad. These include a practitioner's ability to respect and integrate local cultural beliefs and leadership and a community's willingness to accept an outsider who may hold a very different worldview (Haq et al. 2000). Personal background, including language ability, culture and upbringing, religious beliefs, sexual orientation, as well as motives for pursuing work abroad, can give rise to a plethora of ethical considerations that must be carefully navigated in the establishment and maintenance of a global health career.

One example is a clinician who is primarily motivated by a personal agenda rather than prioritizing selfidentified needs of the host community. After accomplishing his own goals (perhaps related to personal cultural or religious beliefs), he soon leaves and moves on to work in another community. Has this clinician fulfilled his own internal motivations at the expense of the community purportedly served? What is this clinician's ultimate impact? Would a different clinician with a different skill set and priorities have been able to better collaborate with the community to ensure local priorities were met, and would a clinician without a specific belief system have been better received?

Another example is a researcher who has become a disease-specific expert, aiding in disease eradication in



Fig. 1 Ethical framework for global health careers

the community in which she started her career. Instead of moving on, she remains in the same community for decades, continuing work on additional concerns. At the same time, however, other communities continue to experience the burden of this disease and could utilize her expertise. Where does the benefit of the greater good for global health, provided by the skills unique to this clinician, fit into her personal and intrinsic motivations to remain in the community with which she has developed a connection? Arguably, however, her decision to stay within the community also provides a global health benefit: working with the community with which she has developed a relationship and using her knowledge, ability, and understanding of the community to effectively improve it.

Through these examples, it becomes apparent that the characteristics of global health practitioners present complex ethical considerations related to their decision-making and the outcomes of their work. They underscore the need for careful examination and monitoring of skills, motivations, and suitability throughout the course of a global health practitioner's career.

#### Practice Considerations: Extrinsic

Ethical dilemmas also arise from factors extrinsic to global health practitioners. One commonly discussed extrinsic factor in global health career practice is resource scarcity. For example, practitioners working abroad for an extended time may find some screening efforts do not meet the overall population needs, due to limited capacity and inconsistent availability of followup treatment (Wilson, Merry, and Franz 2012). Competing needs also call for the practitioner's attention and resources. A lack of resources may force practitioners, regardless of beliefs or skills, to decide how targeted screening and treatment for high-risk individuals compares with selecting another priority that may distribute a lesser benefit to a larger proportion of the population. Additionally, funding sources can often dictate, in direct or indirect ways, the priorities of a program as well as its limitations.

Continuing this example over the practitioner's career, presuming resources remain the same as priorities change, there may be pressure to curtail certain efforts in favor of other priorities that have yet to receive attention. This demonstrates the immense effect that available resources, previous decisions, and trade-offs can exert on career work and priority-setting. Ethically, it can be challenging to remember that resources alone cannot be used to prioritize objectively, despite the temptation to do so.

Another notable extrinsic factor is the nature of the social, political, or relational climate that drives a community to accept, embrace, and partner with outsider individuals and organizations. Have they become invested with a sense of true partnership? Has mutual trust been established with transparent communication regarding the risks and benefits of a program or intervention? Current global health ethics, for example, has heavily discussed resource- and benefit-sharing. The question appears simple: When communities and institutions abroad agree to participate in projects, such as research, are they assured of benefiting from the findings? Should they be? The obvious answer to this question may appear to be a resounding "yes," but, to date,

evaluation remains limited. This then begs the wider question: What role do practitioners play in ensuring equity in areas like scholarship to their host community partners while maintaining their role and duty to their home or sponsoring institutions?

As a final example of extrinsic practice considerations, the nature of turnover and the global health job market presents multiple ethical issues. Turnover magnifies host dependence and can be more devastating than patterns seen with short-term global health work. While the benefits of short-term work are limited, with ethical considerations as described earlier, is it any more ethical for a practitioner to leave a void after an extended commitment to a community abroad? What role does "accrued beneficence" play in mitigating the potential maleficence of leaving? And while some contend that such episodes argue against global health career work, even part-time, other parties would point to the moral imperative fulfilled by any amount of commitment, even if not lasting. How can a balance be struck? Growing local capacity offers a potential means by which to reduce the ethical concerns surrounding dependency and the potential deficit created by departures.

# Community Considerations: The Receiving Community

Global health practice does not occur in a vacuum; practitioners and the conditions in which they practice and wield influence exist within communities. Thus, factors that influence global health career ethics are also related to the effects on the communities involved. Understanding the perspective of the host communities abroad is vital. Perpetuating commonly held stereotypes about resource depravity in lower-income settings is potentially harmful and overall detrimental to progress. This overly simplistic view needs to be replaced by careful, objective data and findings regarding the capacities of such communities, but literature is often lacking. Research is critically needed to appropriately inform future ethical reflections in this field.

One of the most salient issues in the receiving community is related to the ethics surrounding outcomes or effects of practice that exist irrespective of ethical considerations related to the practitioner. For example, even the savviest practitioner's knowledge of local conditions and culture will never compare to that of the community members. Efforts then, even if meant to build local capacity, can potentially be inappropriate or harmful and beg numerous questions related to effects on the community. When trying to "develop local capacity," which aspects are best addressed by local leadership and which by the overseas physician? Also, what are the ethical implications of potentially lost employment, professional development, and training opportunities for local providers compared with the help local providers may receive in addressing the health needs of their communities and the professional relationship they may build with the global health physician?

Another example of considerations of the receiving community relates to practitioner competencies. As no two communities are alike, an important question arises regarding who might be best qualified to judge the relevance of practitioner competencies to community needs. From a practice perspective, a physician might appear to have the abilities needed to practice in a resource-limited setting. However, communities similarly have a right to autonomy and self-determination. Should not these communities be empowered to decide if a practitioner is competent to work on locally identified problems?

Indeed, as practitioner needs change over the course of a career, so do those of the community he or she serves. Would a community abroad deem it more effective to have a new physician arrive and begin working versus retaining a physician who has been there for a decade? How can we ethically weigh such a decision and its potential outcomes from the host community's lens? In the same way, one last example is the potential conflict between changing organizational goals and community priorities. What happens when the visiting physician represents an organization whose goals conflict with community needs and priorities?

#### Community Considerations: The Home Community

Important ethical differences exist in comparing the effects of short-term global health experiences with global health careers on the practitioner's home community. When physicians from high-income countries are recruited to low- and middle-income countries, is an intrinsic value judgment being made that health issues in low-income settings? More challenging is that, beyond clumsy general indicators such as development level and access, there is no objective way to evaluate a subjective experience of need. Disease, injury, and associated human suffering represent needs that merit attention, whether they occur at home or abroad. However, we must also consider the question of best fit for practitioners. Indeed, students choose to pursue different specialties as a career, with a practice-wide competition for excellent candidates seen as morally acceptable. In the same way that not all students are destined to be surgeons, one can argue that not all practitioners are as effective in Manhattan as they would be on a Native American reservation or in a resource-poor village in sub-Saharan Africa. Is a practitioner with the skills to be a global health physician making a moral decision to practice in a setting where his or her strengths are emphasized and where he or she can most effectively bring about change? Or are such practitioners choosing to ignore the needs of their own communities at home? Similarly, is community support of the pursuit of global health careers ultimately beneficial through improved understanding between peoples? Or should home countries safeguard physicians as vital resources, despite a less ideal fit?

Finally, we must consider the opportunity costs and benefits/harms to the local community at home. Unlike short-term global health ethics, which assumes that trainees and physicians abroad eventually return and posits a number of benefits that the local community derives from such efforts, global health careers take physicians away from their home communities that supported their training. This is, in many ways, the reverse of health care worker migration from low- and middle-income countries to high-income countries, but is almost the same duty-to-care principle that is in question with any career that takes a health care provider away from the community that supported his or her training.

# Using the Framework: A Need for Comprehensive Research Into Physician Career Involvement in Global Health

Current literature on global health is largely based on short-term global health work, and publications on global health ethics are no exception. Short-term work and associated ethical discussions have been the focus of numerous reports and studies. A report on global health partnerships, for example, authored by Nigel Crisp (2007), former chief executive of the United Kingdom's National Health Service, emphasized the importance of ensuring that experiences of trainees abroad match the country's needs and plans and that preexisting inequities are not exacerbated through the misguided application of financial, human, or material resources for the sake of the medical trainee (Benatar and Singer 2000). Global health careers, in contrast, feature far more nebulous and complex ethical frameworks and considerations, with the time course exposing practitioners and communities abroad and at home to benefits, harms, and reprioritizations that seem to inexorably progress, compound, and evolve.

As a whole, the concept of physician career involvement in global health remains poorly elucidated, despite the growing interest and participation of trainees and young physicians. Given the growth of programs that support sustained physician participation in work abroad, it is essential to expand the study of global health ethics to consider career-length implications. Our framework will allow physicians considering or currently involved in global health to consider the ethical implications of their participation, assisting them to best decide what type of career involvement will be most beneficial and least harmful to the communities they look to serve. This framework also will serve as a point of continued research and expansion of the literature on long-term ethical implications of career participation by physicians in global health and work abroad.

#### References

- Bauer, T.A., and J. Sanders. 2009. Needs assessment of Wisconsin primary care residents and faculty regarding interest in global health training. *BMC Medical Education* 9: 36. doi:10.1186/ 1472-6920-9-36.
- Benatar, S.R., and P.A. Singer. 2000. A new look at international research ethics. *British Medical Journal* 321(7264): 824– 826.
- Blanchard-Horan, C., V. Stocker, L. Moran, et al. 2012. Examining the challenges and solutions to the implementation of trials in resource-limited settings: Limited Resource Trials. *Applied Clinical Trials* 21(1): 34–42.
- Chiller, T.M., P. De Mieri, and I. Cohen. 1995. International health training. The Tulane experience. *Infectious Disease Clinics of North America* 9(2): 439–443.
- Crisp, N. 2007. Global health partnerships: The UK contribution to health in developing countries. CiteSeer. http://citeseerx. ist.psu.edu/viewdoc/summary?doi=10.1.1.121.4359.
- Easterbrook, P., A. Sands, and H. Harmanci. 2012. Challenges and priorities in the management of HIV/HBV and HIV/HCV coinfection in resource-limited settings. *Seminars in Liver Disease* 32(2): 147–157.

- Eyelade, O.R., A.J. Ajuwon, and C.A. Adebamowo. 2011. An appraisal of the process of protocol review by an ethics review committee in a tertiary institution in Ibadan. *African Journal of Medicine and Medical Sciences* 40(2): 163–169.
- Friedman, A., L. Loh, and J. Evert. 2014. Developing an ethical framework for short-term international dental and medical activities. *Journal of the American College* of Dentists 81(1): 8–15.
- Gonzalez, R.A. 2012. The vocation to serve: Cornerstone of health care. *MEDICC Review* 14(3): 52.
- Haq, C., D. Rothenberg, C. Gjerde, et al. 2000. New world views: Preparing physicians in training for global health work. *Family Medicine* 32(8): 566–572.
- Hofmeyr, G.J., R.A. Haws, S. Bergstrom, et al. 2009. Obstetric care in low-resource settings: What, who, and how to overcome challenges to scale up? *International Journal of Gynaecology and Obstetrics* 107(Suppl 1): S21–S45.
- Hunt, M.R. 2009. Moral experience of Canadian healthcare professionals in humanitarian work. *Prehospital Disaster Medicine* 24(6): 518–524.
- Lairumbi, G.M., P. Michael, R. Fitzpatrick, and M.C. English. 2011. Ethics in practice: The state of the debate on promoting the social value of global health research in resource poor settings particularly Africa. *BMC Medical Ethics* 12: 22. doi: 10.1186/1472-6939-12-22.
- Lairumbi, G.M., S. Molyneux, R.W. Snow, K. Marsh, N. Peshu, and M. English. 2008. Promoting the social value of research in Kenya: Examining the practical aspects of collaborative partnerships using an ethical framework. *Social Science and Medicine* 67(5): 734–747.
- Lairumbi, G.M., M. Parker, R. Fitzpatrick, and M.C. English. 2012. Forms of benefit sharing in global health research undertaken in resource poor settings: A qualitative study of stakeholders' views in Kenya. *Philosophy, Ethics, and Humanities in Medicine* 7: 7. doi:10.1186/1747-5341-7-7.
- Le Loup, G., S. Fleury, K. Camargo, and B. Larouze. 2010. International institutions, global health initiatives and the challenge of sustainability: Lessons from the Brazilian AIDS programme. *Tropical Medicine and International Health* 15(1): 5–10.
- Pinto, A.D., and R.E. Upshur. 2009. Global health ethics for students. *Developing World Bioethics* 9(1): 1–10.
- Pirkle, C.M., A. Dumont, and M.V. Zunzunegui. 2012. Medical recordkeeping, essential but overlooked aspect of quality of

care in resource-limited settings. International Journal of *Quality in Health Care* 24(6): 564–567.

- Provenzano, A.M., L.K. Graber, M. Elansary, K. Khoshnood, A. Rastegar, and M. Barry. 2010. Short-term global health research projects by US medical students: Ethical challenges for partnerships. *The American Journal of Tropical Medicine* and Hygiene 83(2): 211–214.
- Ramsey, A.H., C. Haq, C.L. Gjerde, and D. Rothenberg. 2004. Career influence of an international health experience during medical school. *Family Medicine* 36(6): 412–416.
- Ravishankar, N., P. Gubbins, R.J. Cooley, et al. 2009. Financing of global health: Tracking development assistance for health from 1990 to 2007. *The Lancet* 373(9681): 2113–2124.
- Redwood-Campbell, L., V. Ouellette, K. Rouleau, K. Pottie, and F. Lemire. 2007. International health and Canadian family practice: Relevant to me, is it? *Canadian Family Physician* 53(4): 600–602, 608–610.
- Rudan, I., L. Kapiriri, M. Tomlinson, M. Balliet, B. Cohen, and M. Chopra. 2010. Evidence-based priority setting for health care and research: Tools to support policy in maternal, neonatal, and child health in Africa. *PLoS Medicine* 7(7): e1000308. doi:10.1371/journal.pmed.1000308.
- Schieber, G.J., P. Gottret, L.K. Fleisher, and A.A. Leive. 2007. Financing global health: Mission unaccomplished. *Health Affairs* 26(4): 921–934.
- Sirriyeh, R., R. Lawton, P. Gardner, and G. Armitage. 2010. Coping with medical error: A systematic review of papers to assess the effects of involvement in medical errors on healthcare professionals' psychological well-being. *Quality* and Safety in Health Care 19(6): e43. doi:10.1136/qshc. 2009.035253.
- Smith, J.K., and D.B. Weaver. 2006. Capturing medical students' idealism. Annals of Family Medicine 4(Suppl 1): S32–S37, S58–S60.
- Thompson, M.J., M.K. Huntington, D.D. Hunt, L.E. Pinsky, and J.J. Brodie. 2003. Educational effects of international health electives on U.S. and Canadian medical students and residents: A literature review. *Academic Medicine* 78(3): 342–347.
- World Health Organization. 1978. Declaration of Alma-Ata: International conference on primary health care, Alma-Ata, USSR, 6-12. http://www.who.int/publications/almaata\_ declaration en.pdf.
- Wilson, J.W., S.P. Merry, and W.B. Franz. 2012. Rules of engagement: The principles of underserved global health volunteerism. *American Journal of Medicine* 125(6): 612–617.