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The Context of Ethical Problems in Medical Volunteer Work

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Abstract Ethical problems are common in clinical medicine, so medical volunteers who practice clinical medicine in developing countries should expect to encounter them just as they would in their practice in the developed world. However, as this article argues, medical volunteers in developing countries should not expect to encounter the same ethical problems as those that dominate Western biomedicine or to address ethical problems in the same way as they do in their practice in developed countries. For example, poor health and advanced disease increase the risks and decrease the potential benefits of some interventions. Consequently, when medical volunteers intervene too readily, without considering the nutritional and general health status of patients, the results can be devastating. Medical volunteers cannot assume that the outcomes of interventions in developing countries will be comparable to the outcomes of the same interventions in developed countries. Rather, they must realistically consider the complex medical conditions of patients when determining whether or not to intervene. Similarly, medical volunteers may face the question of whether to provide a pharmaceutical or perform an intervention that is below the acceptable standard of care versus the alternative of doing nothing. This article critically explores the contextual features of medical volunteer work in developing countries that differentiate it from medical practice in developed countries, arguing that this context contributes to the creation of unique ethical problems and affects the way in which these problems should be analyzed and resolved.

Keywords Bioethics · Clinical ethics · Developing countries · Medical missions · Medical volunteers

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Introduction

In 2007, low-income countries had an average life expectancy of 57 years, as compared to an average of 80 years in high income countries (World Health Organization 2009). In 2005, the maternal mortality rate in low-income countries was 650 deaths per 100,000 live births, as compared to 9 deaths per 100,000 live births in high-income countries (World Health Organization 2009). In 2004, the distribution of years of life lost in low-income countries was 68% to communicable disease, 21% to non-communicable disease and 10% to injuries (World Health Organization 2009). In high-income countries, this distribution was 8% to communicable disease, 77% to non-communicable disease, and 15% to injuries (World Health Organization 2009). These statistics demonstrate some of the differences between the developed and the developing world. In general, people in developing countries have shorter life spans and are significantly more likely to die of communicable diseases than people in developed countries. The dire state of health care in developing countries motivates some medical professionals to travel to these areas, volunteering their time, knowledge, and skills to help those in great need of medical care. When they arrive, many find that the suffering they see their patients experience is even more striking than the statistics are able to convey (Farmer 2005, p. 31).

Ethical problems are common in clinical medicine, so medical volunteers who practice clinical medicine in developing countries should expect to encounter them just as they would in their practice in the developed world. However, as this article argues, medical volunteers in developing countries should not expect to encounter the same ethical problems as those that dominate Western biomedicine or to address ethical problems in the same way as they do in their practice in developed countries. This article describes the contextual features of medical volunteer work in developing countries that differentiate it from medical practice in developed countries, and argues that this context contributes to the creation of unique ethical problems and affects the way in which these problems should be analyzed and resolved.

Research Ethics in Developing Countries

Although clinical ethics in developing countries is rarely discussed in the bioethics literature, research ethics in developing countries is a common topic (Crump and Sugarman 2008). In 1997, Peter Lurie and Sidney Wolfe wrote an essay in the *New England Journal of Medicine*, attacking several clinical trials designed to study a short course antiretroviral treatment to prevent the vertical transmission of HIV in developing countries (Lurie and Wolfe 1997). Catalyzed by this article, a debate began about what makes research in developing countries ethical (Emanuel et al. 2004; London 2000; Phanuphak 1998; Resnik 1998). Because potential research subjects in developing countries are generally poor, uneducated, and have limited access to health care, they are an especially vulnerable population. Researchers, motivated by academic advancement, can easily exploit these individuals who do

not have alternative options for accessing medical care. In addition, potential subjects speak different languages and have different cultural beliefs than researchers, making communication between the two groups difficult. These and other contextual features differentiate research ethics in developing countries from research ethics in developed countries. They contribute to the creation of different ethical problems that require analytic approaches sensitive to the context of the developing world.

Many of the contextual features that make research ethics in developing countries different from research ethics in developed countries are also features of medical volunteer work in developing countries. The patients who medical volunteers serve are from the same population that is considered vulnerable in research ethics—they are poor, uneducated, and have limited access to medical care. In addition, there are cultural and language barriers between patients and medical volunteers. The research ethics literature suggests that these contextual features create unique ethical problems and require a different approach to their analysis and resolution (Emanuel et al. 2004; Lavery 2007). Rather than waiting for a catalyst to spark a similar debate in clinical ethics, it is time for clinical ethics to begin exploring the ethical problems encountered by medical volunteers in developing countries and suggesting analysis methods that account for this unique context.

The Contextual Features of Medical Volunteer Work

There are several contextual features of medical volunteer work in developing countries that differentiate it from medical practice in developed countries. An array of complex factors affect patients' abilities to access health care, leading to delays in presentation. When patients see medical volunteers, they are often sicker than the patients who medical volunteers see in developed countries. In addition, medical resources and personnel in developing countries are often very limited, making the provision of appropriate care challenging. Moreover, medical volunteers have only a limited time in which to see patients before they have to return to their practice in the developed world. Finally, cultural and language barriers frustrate the communication between patients and medical volunteers in developing countries. This section describes how each of these factors contributes to the ethical and technical challenges of medical volunteer work in developing countries.

Structural Violence

The patients who medical volunteers encounter in developing countries are victims of what Paul Farmer terms "structural violence" (Farmer 2005). Structural violence is the combination of large-scale social, economic and environmental factors, including poverty, sexism, and political violence, that influence the poor health of people in developing countries (Castro and Farmer 2003). The extent and severity of poverty is especially striking among people in developing countries. In 2005, just over half of people in low-income countries lived on less than $1 (US) per day (World Health Organization 2009). People living in poverty do not have the

financial means to access health care even when facilities are available in their area (Mukherjee et al. 2006; Nijssen-Jordan 2007). This limited access to health care contributes to the poor general health of patients and increases the likelihood that they will spread communicable diseases to family members and other close contacts (Castro and Farmer 2003). In addition, when patients have to choose between purchasing medications and purchasing food, they forgo medications, which can lead to the development of drug resistance in diseases like tuberculosis, HIV, and cholera (Kim and Farmer 2006; Mukherjee, et al. 2006; Okeke et al. 2007).

Harsh living conditions go hand in hand with poverty. Poor patients in developing countries live in crowded conditions with little access to clean water. Overcrowding encourages the spread of respiratory infections such as tuberculosis and pneumonia (Isturiz and Carbon 2000; Keshavjee et al. 2008). Contaminated water increases the risk of acquiring many infections, including cholera and amebiasis (Cavagnaro et al. 2006; Chaignat et al. 2008). Even when patients are successfully treated for these infections, the likelihood of recurrence is high because the source of disease has not been eliminated.

In many areas of the developing world, women are viewed as subordinate to men. As a result, they are not allowed to make decisions regarding their medical care or to seek emergency care non-chaperoned (Ng'ang'a 2006). In some places, women are not allowed to remove their clothing in front of a man, regardless of the context, which makes thorough physical examination impossible (Rae 2005). The powerlessness of women is a significant contributing factor to the high maternal mortality rate in many developing countries (Chadney 2004).

Political violence can also be a contributing factor to the poor health of individuals in developing countries. Threats of violence can prevent clinics from receiving medical supplies (Pretto et al. 1994), or clinics can be damaged during wars (Pearn 1996). In addition, the lives of medical volunteers can be endangered, adding to the stress of an already stressful situation (Hewison 2003; Pearn 1996).

Structural violence makes people in developing countries vulnerable to poor health. Factors such as poverty and sexism prevent or delay patients from seeking health care when they are in need. Factors including political violence and poverty can disrupt treatment regimens. Further, even when patients receive appropriate care, their living conditions make them vulnerable to contracting diseases all over again. Without addressing the issues of structural violence, all medical volunteers can hope to do is provide a short-term fix for most of their patients in developing countries. The inability to provide anything more than a temporary fix leads some medical volunteers to question the merit of their work (DeCamp 2007; Dupuis 2004), or to feel discouragement. The ethical question that this situation raises is whether or not these temporary interventions are truly beneficial for patients who are going to be back in the same situation as soon as medical volunteers leave.

Medical Conditions

Beyond the social, economic, and environmental context of developing countries, the medical context can also contribute to ethical problems in medical volunteer work. The medical conditions of patients in developing countries differ from those

in the developed world. Many patients in developing countries have diseases such as tuberculosis, malaria, and intestinal parasites, which are rarely seen in developed countries (Cappello et al. 1995). Even when patients have familiar illnesses, they are often at more advanced stages of disease because they have little or no access to health care in the absence of medical volunteers (Cappello et al. 1995; Farmer 2007; Rinsky 2002). Moreover, malnutrition and poor general health often compound the primary diseases of patients in developing countries (Dupuis 2004; Farmer 2007).

These factors are not only medically challenging but are also ethically challenging. Poor health and advanced disease increase the risks and decrease the potential benefits of some interventions (Dupuis 2004). When medical volunteers intervene too readily, without considering the nutritional and general health status of patients, the results can be devastating. In one case, described by Dupuis, two malnourished children died after cleft palate operations performed by medical volunteers (Dupuis 2004). These surgeries would never have been attempted in a developed country because of the increased risks of anesthesia in malnourished patients.

Medical volunteers cannot assume that the outcomes for interventions in developing countries will be comparable to the outcomes for the same interventions in developed countries. Rather, they must realistically consider the complex medical conditions of patients when determining whether or not to intervene. The ethical questions that can arise in the setting of advanced complex disease are whether or not the risks and potential benefits of the proposed intervention can be quantified accurately and if the balance between the two is acceptable. While questions about the balance of risks and benefits are commonly asked in developed countries, in medical volunteer work they are often complicated by uncertainty regarding the risks and benefits, the limitations in alternative options, and, as discussed later, the limited time that medical volunteers have to make a decision and intervene.

Limited Medical Resources

Along with serving patients who have complicated medical problems, medical volunteers in developing countries have fewer resources to work with than they do in developed countries. Medications for treating common diseases including tuberculosis, malaria, and meningitis are chronically in short supply or not available at all (Anderson 2007; Buchman 2007; Goldring 2006; Holmes 1996; Won et al. 2006). Equipment considered standard in the developed world, such as blood pressure cuffs and glucometers, is not always accessible in clinics in developing countries (Braico 2007). Even paper on which to document patient care notes can be a limited resource (Patterson 2007; Won et al. 2006).

Limited medical resources are especially frustrating for surgical volunteers. Many operations have to be done without preoperative imaging because CT and MRI machines are not readily available (Agrawal et al. 2007; Won et al. 2006). Facilities in developing countries are often unable to maintain adequate sterility in operating rooms (Burgel 1993; Patterson 2007; Spieker 2007). Moreover, equipment considered disposable in the developed world is often washed and reused in operating rooms in the developing world (Christman 2000; Patterson 2007). Steady

electrical power supplies are not guaranteed; thus, medical volunteers must be prepared to operate under flashlights and without the ability electronically to monitor patients under general anesthesia (Bosenberg 2007; Cappello et al. 1995). Even after successful surgery, patients are faced with significant obstacles to recovery. Resources for wound care, which are readily available in developed countries, are frequently unavailable in developing countries, so many postoperative patients die of simple infections (Berger 2006). Intensive care units (ICUs) for recovery are rare in developing countries (Clem and Green 1996). Even when ICUs do exist, they do not have the same equipment as those in developed countries. They lack ventilators, electrocardiogram machines, and cardiac monitors (Abrams 1998; Clem and Green 1996; Eddleston et al. 2006). Without ventilator support and close postoperative monitoring, the risks of morbidity and mortality are higher than in the developed world (Bosenberg 2007).

Limitations in medications and equipment are often a source of frustration for medical volunteers, not to mention for their patients (Buchman 2007). Medical volunteers have the knowledge and skills needed to provide life saving care but lack the resources necessary to intervene (Goldring 2006). They watch patients die of easily treatable diseases, powerless to change the outcome (Goldring 2006). When medical volunteers have only the option not to intervene due to a complete lack of resources, there is no immediate clinical ethical issue because there is no alternative option. However, more commonly, medical volunteers face the question of how to provide needed treatment using the limited resources available (Shidara et al. 2007). One ethical question that medical volunteers may face is whether or not to provide a pharmaceutical or perform an intervention that is below the acceptable standard of care versus the alternative of doing nothing. Medical volunteers may also have to make decisions about who to treat when there are more patients in need than resources available.

Limited Medical Personnel

Not only are medical resources limited in developing countries, but local medical personnel are also in short supply and those who are available are often untrained or under-trained (Levin 2007; Nijssen-Jordan 2007; Pham and Tollefson 2007). This means that medical volunteers are often the most qualified general health care provides in the area where they are serving, even if they are specialists in their home countries. As such, they may be asked to perform interventions that are beyond the scope of their training because there is no one more qualified to intervene (Clem and Green 1996). When medical providers in developed countries encounter a patient who needs an intervention that they are not qualified to provide, they are usually able to transfer the patient to a more appropriate provider. However, in developing countries, medical volunteers are often the only option for patients—more qualified medical providers are not available and transfer to a more appropriate facility is not possible (Ho 2004). The ethical question raised in these scenarios is whether or not the medical volunteer should intervene when he or she is not fully competent, knowing that non-intervention will leave the patient without another option for medical care.

Limited Time

Beyond the setting of medical volunteer work, the complexities of patients, and the limited resources that medical volunteers have to work with, the nature of medical volunteer work itself can contribute to ethical problems. One significant difference between medical volunteer work in developing countries and medical practice in developed countries is that medical volunteers work for a finite period of time, usually weeks to months, leaving before all of their patients' medical problems have been addressed. Medical volunteers are unable to provide continuity of care and follow-up monitoring, which are standard in developed countries. They often have to limit their interventions to those that can be achieved in one visit without any follow-up care (Beitler et al. 2006). With extremely short missions, laboratory testing that takes more than a couple of days to complete is useless because medical volunteers will be gone before the results are available (Won et al. 2006). Because medical volunteers often leave without following up with patients, they are unaware of the effectiveness of their interventions. They are also unaware of complications that arise after they have left (Robinson 2006). One problem with the lack of follow-up care is that medical volunteers cannot be held responsible for the outcomes of their interventions and they do not have to deal with the consequences of their actions (Robinson 2006). They do not see patients die of postoperative wound infections, have adverse reactions to medications or develop drug-resistant diseases. They leave these complications behind for patients and local medical personnel to deal with.

The overwhelming number of people in need of medical care compounds the issue of limited time. Medical volunteers feel that they must see as many patients as possible or perform as many procedures as possible, thereby limiting the amount of time that they spend with each individual patient. This body count mentality is often the only way to quantify the impact that medical volunteers have in an area because they leave before outcomes can be measured (Dupuis 2004). Medical volunteers can, therefore, claim that they saw or treated so many patients, but they cannot say how many of these treatments were successful. By emphasizing the mass delivery of medical and surgical care, medical volunteers may lower the quality of care afforded to each patient. In addition, when medical volunteers perform large numbers of surgical procedures, they can easily overwhelm local medical personnel who bear the responsibility for providing postoperative care after medical volunteers have left (Yeow et al. 2002). In order to best serve patients, medical volunteers must find a balance between the quality and quantity of the health care they provide. They must determine how best to benefit each patient as well as how best to benefit the community overall. They must also take into account limitations in the ability of local medical personnel to provide postoperative and follow up care for interventions so as not to overwhelm them.

Cultural and Language Barriers

The differences between patients and medical volunteers in developing countries are often pronounced and can contribute to ethical problems. Language barriers

frustrate communication during the short encounters between patients and medical volunteers (Bosenberg 2007; Sneag et al. 2007). Good translation is essential to obtaining an accurate history and providing appropriate care (Won et al. 2006). Conversely, poor translation can lead to inaccurate diagnosis and inappropriate interventions. This is especially concerning given the fact that medical volunteers serve for a limited time and are often unable to follow up with patients to determine whether or not interventions are effective.

Beyond language barriers, there are also cultural differences between medical volunteers and patients. Many patients in developing countries believe in a supernatural etiology of disease (e.g., sorcery or witchcraft) (Baskind and Birbeck 2005; Ekortarl et al. 2007; Epstein 2007, p. 148; Osborne 2006). Exploring these beliefs is important because they may influence the ways in which patients view a disease and, more importantly, how patients adhere to treatment plans (Kleinman and Benson 2006). Medical volunteers cannot assume that patients are familiar with Western biomedicine or that they understand a germ theory of disease as they generally can in their practice in the developed world. They have to be prepared to encounter patients with vastly different cultural beliefs, to engage in conversations about these beliefs, and to negotiate treatment plans that do not conflict with the deeply held beliefs of their patients (Kleinman and Benson 2006).

The Complex Context of Medical Volunteer Work

Medical volunteers in developing countries encounter a wide array of challenges, both technical and ethical. Their patients are the victims of large-scale social, economic, and environmental factors, which make them susceptible to disease and unable to access appropriate health care. When patients do access care from medical volunteers, they often have diseases that are unfamiliar or more advanced than medical volunteers are accustomed to seeing. Limited medical resources compound the complex medical problems of patients. In addition, there are limitations in the number of local medical personnel available to meet the needs of patients when medical volunteers leave. Medical volunteers themselves are limited by the temporary nature of their experiences, often having to leave before they have addressed all of the medical problems of their patients. Finally, there are cultural and language barriers between medical volunteers and patients, making communication difficult. All of these factors come together to make the practice of clinical medicine by medical volunteers in developing countries incredibly complex and vulnerable to an array of ethical problems.

Ethical Problems Created by the Contextual Features of Medical Volunteer Work

The predominant contextual features of Western biomedicine are high-technology capabilities, the legal landscape of medical practice and patient autonomy (Kleinman 1995, p. 51). Common ethical questions that arise in this setting are about the appropriate use of advance directives and do-not-resusitate (DNR) orders,

when to determine that ICU care is futile, when to withhold or withdraw treatment, when to test patients for genetic disease, and how to distribute organs for transplantation. In contrast to Western biomedicine in developed countries, the context of medical volunteer work in developing countries is predominated by limitations in medical resources, medical personnel and time, and differences between medical volunteers and patients. The common ethical questions that medical volunteers encounter are about how to balance risks and benefits, what level of care below the standard is acceptable, how to distribute limited medical resources, when non-intervention is the appropriate choice, and how to communicate and negotiate with patients who speak different languages and have different cultural beliefs and practices.

Preparing for Ethical Problems in Developing Countries

Given the complexity of the contextual features surrounding medical volunteer work in developing countries, it should be no surprise to medical volunteers that they will encounter both technical and ethical problems. They will have to make tough decisions regarding resource allocation, whether or not to provide medical and surgical interventions, and how to interact with patients with different cultural beliefs. These decisions will have to be made in the field, without the luxury of ethics consultants or committees, and often without the help of other medical volunteers. Therefore, it is imperative that medical volunteers are not only aware of the high likelihood that they will encounter ethical problems but that they also have a way to approach these problems.

The first step that medical volunteers can take toward addressing ethical problems is to prepare for their experiences. They can contact medical volunteers who have previously been to the area to learn about any ethical problems that they have encountered and how they addressed and resolved them. Medical volunteers can learn about the cultural beliefs and practices in the area, so as to begin preparing for cross-cultural communication and negotiation in patient encounters. They can also learn about the limitations in facilities and medical resources that they are likely to face in order to plan for how best they can use these resources and to determine what interventions they will and will not be able to do. With preparation, medical volunteers should be able to anticipate ethical problems, avoiding them when possible and addressing them early when they do occur.

While good preparation can help medical volunteers avoid some ethical problems, it does not guarantee that they will not encounter any. Medical volunteers should be prepared to address ethical problems that occur while they are in developing countries. The context of medical volunteer work is dominated by limitations in goods, local medical personnel and time as well as differences between medical volunteers and patients, and the ethical problems medical volunteers encounter are strongly influenced by these features. In addressing ethical problems in this context, two essential questions must be explored: (1) What are the limitations (e.g., resources, personnel, time)? And (2) what are the differences between the medical volunteer and the patient (or other stakeholders) (e.g., language, cultural beliefs,

values, norms)? By asking these questions, medical volunteers will be able to identify areas of uncertainty or disagreement among stakeholders as well as the limitations to their options. This will allow them to determine what options are realistic and acceptable to stakeholders. They can then engage in communication and negotiation with patients and other stakeholders to determine what option is most appropriate. When medical volunteers encounter ethical problems in developing countries, they must be aware of the context of the situation so as to understand the features that are contributing to the problem and be able to determine how best to work toward a resolution.

Conclusion

Medical volunteers in developing countries encounter different ethical problems than they do in their practice in the developed world. Medical volunteer work is dominated by a context of limited resources, personnel and time as well as by language and cultural barriers. Because medical volunteers are likely to encounter ethical problems during their work in developing countries and are unlikely to have an ethics committee or consultant available, it is essential that they prepare for common ethical problems, recognize when these problems arise, and address them appropriately, taking into account the complex contextual features that contribute to the development of these problems. While this article broadly outlines the various ethical issues that medical volunteers in developing countries encounter and provides general suggestions for how medical volunteers can prepare for and approach ethical problems, more work needs to be done to explore each of these ethical issues and to develop instructive preparation and analysis techniques for medical volunteers.

References

Abrams, S. (1998). A medical student's experience in Venezuela. *South Dakota Journal of Medicine, 51*(9), 355–356.

Agrawal, A., Pratap, A., Singh, I., Kumar, A., & Shrestha, S. (2007). Cerebellar abscess following mastoidectomy for chronic otitis media. *Pediatric Neurosurgery, 43*(4), 327–329.

Anderson, K. M. (2007). Charting a course into the unknown: Banda Aceh, Indonesia, tsunami, 2004. *Perspectives in Psychiatric Care, 43*(1), 47–51.

Baskind, R., & Birbeck, G. (2005). Epilepsy care in Zambia: A study of traditional healers. *Epilepsia, 46*(7), 1121–1126.

Beitler, A. L., Junnila, J. L., & Meyer, J. H., Jr. (2006). Humanitarian assistance in Afghanistan: A prospective evaluation of clinical effectiveness. *Military Medicine, 171*(9), 889–893.

Berger, E. (2006). Emergency medicine goes global: Specialty steps up humanitarian role. *Annuals of Emergency Medicine, 47*(4), 344–347.

Bosenberg, A. T. (2007). Pediatric anesthesia in developing countries. *Current Opinions in Anaesthesiology, 20*(3), 204–210.

Braico, K. (2007). Megacode Guatemala. *The Pharos of Alpha Omega Alpha Honor Medical Society, 70*(4), 24–27.

Buchman, S. (2007). Tariro: Finding hope in Zimbabwe. *Canadian Family Physician, 53*(11), 1971–1973.

Burgel, H. (1993). East timor. *Medicine and War, 9*(2), 116–124.

Cappello, C. S., Gainer, V. G., & Adkisson, G. H. (1995). The safe practice of anesthesia in developing countries. *CRNA: The Clinical Forum for Nurse Anesthetics, 6*(2), 91–95.
Castro, A. & Farmer, P. (2003). Infectious disease in Haiti. HIV/AIDS, tuberculosis and social inequalities. *EMBO Reports*, 4 Spec No, S20–23.
Cavagnaro, F., Guzman, C., & Harris, P. (2006). Hemolytic uremic syndrome associated with Entamoeba histolytica intestinal infection. *Pediatric Nephrology, 21*(1), 126–128.
Chadney, S. (2004). Maternal mortality in Haiti: A Scottish midwife's perspective. *RCM Midwives, 7*(5), 204–206.
Chaignat, C. L., Monti, V., Soepardi, J., Petersen, G., Sorensen, E., Narain, J., et al. (2008). Cholera in disasters: Do vaccines prompt new hopes? *Expert Review of Vaccines, 7*(4), 431–435.
Christman, M. S. (2000). A personal account of a medical mission. *Journal of the American Academy of Nurse Practitioners, 12*(8), 309–310.
Clem, K. J., & Green, S. M. (1996). Emergency medicine expeditions to the developing world: The Loma Linda University experience in Papua New Guinea. *Academic Emergency Medicine, 3*(6), 624–633.
Crump, J. A., & Sugarman, J. (2008). Ethical considerations for short-term experiences by trainees in global health. *Journal of American Medical Association, 300*(12), 1456–1458.
DeCamp, M. (2007). Scrutinizing global short-term medical outreach. *Hastings Center Report, 37*(6), 21–23.
Dupuis, C. C. (2004). Humanitarian missions in the third world: A polite dissent. *Plastic Reconstructive Surgery, 113*(1), 433–435.
Eddleston, M., Mohamed, F., Davies, J. O., Eyer, P., Worek, F., Sheriff, M. H., et al. (2006). Respiratory failure in acute organophosphorus pesticide self-poisoning. *QJM, 99*(8), 513–522.
Ekortarl, A., Ndom, P., & Sacks, A. (2007). A study of patients who appear with far advanced cancer at Yaounde General Hospital, Cameroon, Africa. *Psychooncology, 16*(3), 255–257.
Emanuel, E. J., Wendler, D., Killen, J., & Grady, C. (2004). What makes clinical research in developing countries ethical? The benchmarks of ethical research. *Journal of Infectious Disease, 189*(5), 930–937.
Epstein, H. (2007). *The invisible cure: Africa, the West, and the fight against AIDS* (1st ed.). New York: Farrar, Straus and Giroux.
Farmer, P. (2005). *Pathologies of power: Health, human rights, and the new war on the poor: With a new preface by the author* (2005 ed.). Berkeley: University of California Press.
Farmer, P. (2007). Whither equity in health? The state of the poor in Latin America. *Cadernos de Saúde Pública, 23*(Suppl 1), S7–S12.
Goldring, M. (2006). Sowing seeds of hope. *Nursing Standard, 20*(44), 22–25.
Hewison, C. (2003). Working in a war zone. The impact on humanitarian health workers. *Australian Family Physician, 32*(9), 679–681.
Ho, S. Y. (2004). Experience as an emergency physician in Sudan. *Hong Kong Medical Journal, 10*(2), 142–143.
Holmes, K. M. (1996). Work and service in Bangladesh—The medical needs are manifold and profound. *Bulletins of the American College of Surgeons, 81*(5), 8–19.
Isturiz, R. E., & Carbon, C. (2000). Antibiotic use in developing countries. *Infection Control and Hospital Epidemiology, 21*(6), 394–397.
Keshavjee, S., Gelmanova, I. Y., Pasechnikov, A. D., Mishustin, S. P., Andreev, Y. G., Yedilbayev, A., et al. (2008). Treating multidrug-resistant tuberculosis in Tomsk, Russia: Developing programs that address the linkage between poverty and disease. *Annuals of the New York Academy of Scientists, 1136*, 1–11.
Kim, J. Y., & Farmer, P. (2006). AIDS in 2006—Moving toward one world, one hope? *New England Journal of Medicine, 355*(7), 645–647.
Kleinman, A. (1995). *Writing at the margin: Discourse between anthropology and medicine*. Berkeley: University of California Press.
Kleinman, A., & Benson, P. (2006). Anthropology in the clinic: The problem of cultural competency and how to fix it. *PLoS Medicine, 3*(10), e294.
Lavery, J. V. (2007). *Ethical issues in international biomedical research: A casebook*. Oxford; New York: Oxford University Press.
Levin, R. (2007). Lessons from Rwanda. *Minnesota Medicine, 90*(3), 32–35.
London, A. J. (2000). The ambiguity and the exigency: Clarifying 'standard of care' arguments in international research. *Journal of Medicine and Philosophy, 25*(4), 379–397.

Lurie, P., & Wolfe, S. M. (1997). Unethical trials of interventions to reduce perinatal transmission of the human immunodeficiency virus in developing countries. *New England Journal of Medicine, 337*(12), 853–856.

Mukherjee, J. S., Ivers, L., Leandre, F., Farmer, P., & Behforouz, H. (2006). Antiretroviral therapy in resource-poor settings. Decreasing barriers to access and promoting adherence. *Journal of Acquired Immune Deficiency Syndrome, 43*(Suppl 1), S123–S126.

Ng'ang'a, N. (2006). Women of the courtyard. A nurse's journey to treat obstetric fistulae in Niger. *AWHONN Lifelines, 10*(5), 410–417.

Nijssen-Jordan, C. (2007). It was time to go back. *Canadian Family Physician, 53*(7), 1210.

Okeke, I. N., Aboderin, O. A., Byarugaba, D. K., Ojo, K. K., & Opintan, J. A. (2007). Growing problem of multidrug-resistant enteric pathogens in Africa. *Emerging Infectious Diseases, 13*(11), 1640–1646.

Osborne, M. (2006). Iye Sowodie's "Gladdie, Gladdie" day. Mercy ships treats women made incontinent by birth injuries. *Midwifery Today with International Midwife, Winter, 80*, 60–61.

Patterson, J. (2007). Living the mission: Medical assistance to Nigeria. *AORN Journal, 86*(5), 735–743.

Pearn, J. (1996). War zone paediatrics in Rwanda. *Journal of Paediatrics and Child Health, 32*(4), 290–295.

Pham, A. M., & Tollefson, T. T. (2007). Cleft deformities in Zimbabwe, Africa: Socioeconomic factors, epidemiology, and surgical reconstruction. *Archives of Facial Plastic Surgery, 9*(6), 385–391.

Phanuphak, P. (1998). Ethical issues in studies in Thailand of the vertical transmission of HIV. *New England Journal of Medicine, 338*(12), 834–835.

Pretto, E. A., Begovic, M., & Begovic, M. (1994). Emergency medical services during the siege of Sarajevo, Bosnia and Herzegovina: A preliminary report. *Prehospital and Disaster Medicine, 9*(2 Suppl 1), S39–S45.

Rae, K. (2005). When God calls you to a hard place. Why start when there is such a need? *Journal of Christian Nurses, 22*(2), 38–40.

Resnik, D. B. (1998). The ethics of HIV research in developing nations. *Bioethics, 12*(4), 286–306.

Rinsky, L. (2002). Personal experiences with overseas volunteerism. *Clinical Orthopaedics and Related Research, 396*, 89–97.

Robinson, O. G., Jr. (2006). Humanitarian missions in the third world. *Plastic Reconstructive Surgery, 117*(3), 1040–1041; author reply 1041.

Shidara, E. K., Hosoda, M., Vuty, S., Toriumi, T., & Seto, K. (2007). Socioeconomic considerations regarding a land mine victim with maxillofacial injuries. *Southeast Asian Journal of Tropical Medicine and Public Health, 38*(5), 913–917.

Sneag, D. B., Schaaf, H. S., Cotton, M. F., & Zar, H. J. (2007). Failure of chemoprophylaxis with standard antituberculosis agents in child contacts of multidrug-resistant tuberculosis cases. *Pediatric Infectious Disease Journal, 26*(12), 1142–1146.

Spieker, J. (2007). An anesthesiologist in Liberia: My experience with Doctors Without Borders. *Proceedings (Baylor University Medical Center), 20*(1), 41–48.

Won, E., Ancona, M., Carrigan, K., Laverty, B., & Rhee, P. (2006). Humanitarian aid mission in east timor: Experiences of U.S. Naval medical services. *Military Medicine, 171*(1), 29–36.

World Health Organization. (2009). *World Health Statistics 2009.* http://www.who.int/whosis/whostat/2009/en/index.html. Accessed 28 Jan 2010.

Yeow, V. K., Lee, S. T., Lambrecht, T. J., Barnett, J., Gorney, M., Hardjowasito, W., et al. (2002). International task force on volunteer cleft missions. *Journal of Craniofacial Surgery, 13*(1), 18–25.