

Perspective

Short-Term Global Health Research Projects by US Medical Students: Ethical Challenges for Partnerships

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Abstract. Recent interest in global health among medical students has grown drastically, and many students now spend time abroad conducting short-term research projects in low-resource settings. These short-term stints in developing countries present important ethical challenges to US-based students and their medical schools as well as the institutions that host such students abroad. This paper outlines some of these ethical issues and puts forth recommendations for ethically mindful short-term student research.

INTRODUCTION

Recently, interest in global health among US-based medical students has exploded, and increasing numbers of students are traveling to low-resource settings for clinical and research electives.^{1,2} One study showed that trainees who have such experiences are more likely to care for impoverished patients in the future and that some may have even changed the focus of their clinical training from subspecialty medicine to general medicine as a result of their time abroad.³ Another study documented an increased interest in volunteerism, humanitarianism, and public health among students who participated in an international elective; however, more research is necessary to truly understand the effects of international experiences on medical trainees.⁴ Furthermore, although there is some evidence that these experiences positively contribute to the professional development of medical students, there is no evidence that the patients involved in research by these trainees derive any benefit from these programs. Sending students to developing countries for short-term research experiences brings additional layers of complexity to an already fraught situation.

In this paper, we explore some ethical concerns that are raised by medical students traveling to low-resource settings for short-term research projects. The first, of course, is the question of whether to offer this opportunity to students. Sending a student abroad for a short time (2–3 months) is exorbitantly expensive, and in most cases, it is unlikely to result in the generation of a significant amount of new and valuable scientific knowledge. Ideally, students desiring international research experience should seek funding for a full year abroad, allowing them significant time to devote to the project. In some circumstances, however, students cannot take an extra year in school, and for some students, short-term experiences can be invaluable. Students who plan to spend their careers in global health must have some opportunity to train in low-resource settings. These programs should be presented as a privilege and be highly competitive. Selected students should be held to the highest possible standards of academic performance and personal character, and preferably, they should possess previous research experience in the United States. Interested students'

motivation for pursuing such short-term research experiences should be evaluated using a student essay as well as an interview with a team of faculty, administrators, and students with prior global-health research experience. Students should be trained in research methods as well as research ethics and Internal Review Board (IRB) issues before their departure for such experiences. We have instituted such a process as part of our more than 40-year-old Wilbur Downs Student International Health Research Fellowship (the student authors are former recipients of this fellowship and the faculty authors all serve or have served on the selection committee for this fellowship).

Through a series of vignettes based on the international research experiences of the student authors of this paper, we propose that the most ethical manner in which students can engage in such research is through a highly comprehensive, collaborative, bilateral partnership between the US medical school and the host institution in the destination country. Several US educational institutions have developed such institutional commitments with international partners.^{5,6} The goals of these partnerships range from preserving the lives of vulnerable populations to capacity building to research collaborations.⁵ Importantly, such partnerships must have a mandate for sustainable capacity building and strengthening of the resources available at the host site, because this can enhance the health and wellbeing of some patients.⁷ Ideally, one aspect of such collaborations would be funding for medical trainees and professionals from the host institution to rotate at the US institution, for the promotion of personal and professional development rather than promoting brain-drain. We assert that sending medical students to developing countries for short-term research projects within the context of such partnerships may help to alleviate some of the ethical problems that we discuss below. We also offer some guidelines for schools to follow in promoting ethical short-term student research in developing countries.

BURDENS ON THE HOST

Qing received an international research fellowship from her medical school. The Liberian physician sponsoring her spent hours assisting with the paperwork for her visa, arranging accommodations for her, and hiring a car to pick Qing up from the airport. Qing faces a series of logistic problems in setting up the study, and it takes longer than anticipated to get her research underway. Qing's sponsor spends 1–2 hours per day away from

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patient care to help her mitigate these difficulties, which disrupts the clinic and causes irritation among the clinic staff.

Medical students face many difficulties in performing short-term research in low-resource settings. These challenges range from negotiating cultural and linguistic barriers to logistic questions such as where to obtain materials that may be required for the study. Already overburdened local staff may be forced to expend significant amounts of time and energy to orient student researchers and assist them with these problems rather than focusing on serving their patients, as occurred in this vignette. As Crump and Sugarman⁸ rightly point out, these impositions on a health system that is already strained by a lack of resources may cause tension between the host and the sending institution and make such research projects ethically questionable. Furthermore, host institutions may be hesitant to address concerns with the wealthier, sending institutions to avoid jeopardizing the partnership between the two bodies.⁸ Benatar and Singer⁹ have also discussed this phenomenon, and they have suggested that one requirement for ethical international health research should be “ensuring [that] existing disparities are not more deeply entrenched by inappropriate deflection of local human or material resources away from the health care system in the host country towards the research project.”⁹

Medical students from the United States and their medical schools have the ethical responsibility to critically assess whether a research project may cause harm by necessitating the diversion of material or human support from the host institution. Many of these impositions may be alleviated through a long-term relationship between the two institutions. For example, US-based faculty advisors who frequently visit or have lived and worked in the intended site of research can more adequately advise students on the logistic and cultural barriers that may exist at the site. These advisors may build deeper relationships with collaborating researchers at the host institutions at the site of research, allowing for better communication between the two parties. Furthermore, US-based students traveling to the same site to perform short-term research projects may collaborate, allowing for a longer period of data collection and higher quality research. Importantly, such research collaborations should include medical students, trainees, or other professionals from the host institution in an effort toward partnership and bilateral capacity building. If possible, funding for exchanges to allow students and researchers from the hosting institution to travel to the partner institution in the United States can further develop a fruitful collaboration. Thus, although unpredictable problems will remain a defining feature of any research project, setting up long-term partnerships between US medical schools and sites of international research in developing countries can alleviate some of the ethical problems that arise from short-term projects.

RESEARCH PRIORITIES: WHO DECIDES?

Chris is a medical student applying for an international research grant. He wants to study HIV. Chris’s advisor approves his proposal and puts him in touch with his colleague Dr. K, who runs a clinic in Vietnam. Dr. K tells Chris that patients have become wary of Westerners studying HIV, and some have complained that only HIV-positive patients benefit from research. Dr. K suggests that Chris develop a project focused on heart disease, which is an increasing concern in the community. Chris

is reluctant to start over on his research proposal and feels that his HIV project is more desirable for his own professional development.

Medical students undertaking international research projects must ensure that their work serves the needs of the community where the research is to occur. Often, projects are developed without the input of local partners. Rightly, this has been referred to as a form of neo-colonialism¹⁰ and is reflected broadly in the lack of representation of researchers from developing countries as first authors in academic journals and on editorial boards, even those specializing in tropical medicine.¹¹ Furthermore, US-based medical students and their medical schools should avoid the trap that some well-intentioned Western aid organizations fall into by only offering research opportunities for certain specific diseases. This can contribute to a perverse internal form of brain drain, where experts at the site of research work on those specific topics that outsiders deem important rather than on diseases important to that researcher’s community.¹² In response to this phenomenon, community engagement or community consultation in the proposed research project has emerged as a requirement for ethical international research.^{10,13} Such engagement might include focus groups of community members discussing areas of research interest or the inclusion of community members in the oversight of a research project. Importantly, it has been shown that cross-cultural research methods that involve greater community collaboration and participation are more likely to provide long-term benefits to the community.¹⁴ The ethical guidelines of the Council for International Organizations of Medical Sciences (CIOMS) stipulate that international research “is responsive to the health needs and the priorities of the population or community in which it is to be carried out” and that “any intervention or product developed, or knowledge generated, will be made reasonably available for the benefit of that population or community.”¹⁵

Again, the ethical problem described in this vignette could be alleviated by the existence of a comprehensive partnership between this student’s medical school and the international institution where he hoped to work. Any such partnership should include a written document that is shared with the US-based partner that outlines specific research priorities for the local community as articulated by the host institution. Funding from a student’s medical school should be incumbent on that student choosing a project targeting the research priorities articulated by the host institutions. Furthermore, students should strive to include international partners in the data collection, interpretation, and publication of the research. As Edejer¹² points out, key principles of a true research partnership include shared responsibility for the project as well as capacity building among international researchers.¹³ US-based medical schools have the responsibility to impart these ethical considerations to nascent global-health researchers.

INFORMED CONSENT AND THE STUDENT-ADVISOR RELATIONSHIP

Amit, a fourth-year medical student, travels to Peru to work on a research project. He and his advisor hire several Peruvian research assistants from the community to perform interviews. After the project is underway, Amit realizes that the assistants often paraphrase the questions and sometimes gloss over the informed consent form. When Amit asks one of the research assistants about it,

he shrugs and says, "I am sure they understand ok." Amit is unsure what to say to his Peruvian supervisor or his advisor back in the United States. He decides not to say anything, because his Peruvian advisor is heavily burdened with clinical duties and his advisor from the United States is counting on this data for a publication.

The issue of informed consent presents a great challenge to all researchers, not simply student researchers carrying out short-term projects. It is accepted practice in international research to solicit IRB approval from both the host institution at the site of data collection and the collaborating institution in the United States. In some countries, a national regulatory body further oversees biomedical research, and so, researchers must be aware of host-country national guidelines for research approval. It is further expected that the IRB review include an examination of the informed consent process for the proposed study.¹⁶ Given the history of Western researchers exploiting vulnerable subjects, researchers rightly continue to analyze factors influencing the process for obtaining informed consent from research subjects in low-resource settings.¹⁷ Part of the ongoing challenge, as is clear in Amit's situation, is how the informed consent process can be translated from the theoretical and abstract domain of Western academic institutions (where much of the research performed in the developing world originates) to the realities of the field. As Benatar¹⁸ suggests, informed consent must be obtained "within the linguistic and cultural framework of research subjects" to function as desired.¹⁸

In this vignette, Amit is witnessing a violation of informed consent, and data in the study described would be unethically obtained. If Amit's medical school were involved in a standing collaboration with his host institution in Peru, this sort of situation could more easily be avoided and resolved. The hosting institution would receive compensation for the time that the advisor spent working with Amit on the study, thus freeing scarce resources to assist students in trouble-shooting problems as described above. Furthermore, in such a partnership, Amit's advisor in the United States would have familiarity with the specific logistical and cultural barriers to informed consent that may exist in the host country, thereby allowing him to serve as a true resource for the student researcher. Additionally, any comprehensive partnership should include pre-departure training for US-based medical students to prepare them to grapple with such ethical questions, should they arise, as well as cultural sensitivity training and if possible, even language training. Ideally, the collaborating institutions should arrange for individuals from the hosting institution to travel to the United States and facilitate such trainings for US-based students and faculty.

CONCLUSION AND RECOMMENDATIONS

The tremendous growth in interest in global health among US-based medical students is heartening, considering the immense challenges that face the global public-health community. Many US-based medical trainees would benefit significantly from opportunities to do research in resource-poor settings, where many of these aspiring physicians hope to eventually provide care to patients, cooperate in the provision of public-health measures, and indeed, perform research in their future careers. If these students could work in collaboration with medical students and medical professionals from their destination communities, these programs could not only serve US-based medical students but also the destination community and build increased capacity for health-care delivery.

TABLE 1
Partnership guidelines for institutions sponsoring short-term overseas research rotations for US-based medical students

Guidelines
Both the US-based medical school and the collaboration overseas site should make a commitment to uphold a comprehensive partnership. Bilateral expectations should be agreed on by both institutions through a memorandum of understanding (MOU). This partnership should include an ongoing, equitable commitment to mutual opportunities for exchange, training, and professional development for both institutions that are aimed at producing important research and improving patient care.
The partnership should include commitments for fair and appropriate compensation for hosting research advisor, interpreters, and other logistical support.
All research should be based on a question that is relevant or of interest to the local community.
Authorship of publication should be determined by accepted guidelines. ¹⁹
Pre-departure preparation for students should include cultural and introductory language training.
Comprehensive US-based support to assist students in troubleshooting should be readily available throughout the time of the students' stay at the host institution.
Practical, case-based training on research ethics should be provided to students before departure as well as IRB approval from both institutions for any research project.

US-based medical students and medical-school administrators must be cognizant of the complex ethical issues that short-term research projects present. We, therefore, present recommendations for medical schools that send medical students to perform short-term research in resource-poor settings (Table 1).

Developing longstanding partnerships can assist US-based medical schools and medical students to ensure that these experiences are both meaningful and ethical. A long-term collaboration between partner institutions, in which the two parties grow to have a deep understanding of one another's culture and values, can help medical students mitigate ethically suspect situations and prevent students from having to deal with difficult ethical questions on their own. Furthermore, if the two parties are truly equal partners from the outset of a research project, both partners can amicably and ethically negotiate the grey areas that will inevitably come about when the project is underway.

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REFERENCES

1. Drain PK, Primack A, Hunt DD, Fawzi WW, Holmes KK, Gardner P, 2007. Global health in medical education: a call for more training and opportunities. *Acad Med* 82: 226-230.

2. Panosian C, Coates TJ, 2006. The new medical “missionaries”—grooming the next generation of global health workers. *N Engl J Med* 354: 1771–1773.
3. Gupta AR, Wells CK, Horwitz RI, Bia FJ, Barry M, 1999. The International Health Program: the fifteen-year experience with Yale University’s Internal Medicine Residency Program. *Am J Trop Med Hyg* 61: 1019–1023.
4. Smith JK, Weaver DB, 2006. Capturing medical students’ idealism. *Ann Fam Med* 4 (Suppl 1): S32–S37.
5. Babich LP, Bicknell WJ, Culpepper L, Jack BW, 2008. Social responsibility, international development, and institutional commitment: lessons from the Boston University experience. *Acad Med* 83: 143–147.
6. Margolis CZ, Deckelbaum RJ, Henkin Y, Baram S, Cooper P, Alkan M, 2004. A medical school for international health run by international partners. *Acad Med* 79: 744–751.
7. Kickbusch I, Novotny TE, Drager N, Silberschmidt G, Alcazar S, 2007. Global health diplomacy: training across disciplines. *Bull World Health Organ* 85: 971–973.
8. Crump JA, Sugarman J, 2008. Ethical considerations for short-term experiences by trainees in global health. *J Am Med Assoc* 300: 1456–1458.
9. Benatar SR, Singer PA, 2000. A new look at international research ethics. *BMJ* 321: 824–826.
10. Pinto AD, Upshur RE, 2009. Global health ethics for students. *Dev World Bioeth* 9: 1–10.
11. Langer A, Díaz-Olavarrieta C, Berdichevsky K, Villar J, 2004. Why is research from developing countries underrepresented in international health literature, and what can be done about it? *Bull World Health Organ* 82: 802–803.
12. Edejer TT, 1999. North-South research partnerships: the ethics of carrying out research in developing countries. *BMJ* 319: 438–441.
13. Bhutta ZA, 2002. Ethics in international health research: a perspective from the developing world. *Bull World Health Organ* 80: 114–120.
14. Glanz BK, Lerman C, 1996. Ethical issues in the design and conduct of community-based intervention studies. Coughlin SS, Beauchamp TL, eds. *Ethics and Epidemiology*. New York, NY: Oxford University Press, 156–157.
15. CIOMS International Ethical Guidelines for Biomedical Research Involving Human Subjects, 2009. Available at: http://www.cioms.ch/frame_guidelines_nov_2002.htm. Accessed October 14, 2009.
16. Barry M, 1988. Ethical considerations of human investigation in developing countries. *N Engl J Med* 319: 1083–1086.
17. Jegede AS, 2009. Understanding informed consent for participation in international health research. *Dev World Bioeth* 9: 81–87.
18. Benatar SR, 2004. Towards progress in resolving dilemmas in international research ethics. *J Law Med Ethics* 32: 574–582.
19. Rennie D, Flanagan A, Yank V, 2000. The contributions of authors. *J Am Med Assoc* 284: 89–91.