

Courting Danger while Doing Good — Protecting Global Health Workers from Harm

Claire Panosian, M.D.

Until the morning of February 26, 2010, the name Eddie Roach meant nothing to me. Then a desperate e-mail brought the 32-year-old self-described “global health missionary” into my life. Weeks earlier, Roach had been distributing handheld water purifiers in rural Uganda; now, according to his friend’s SOS, he was in a Nevada intensive care unit awaiting dialysis and exchange transfusion. Diagnosis? Severe and complicated *Plasmodium falciparum* malaria.

The critically ill Roach had actually sought help well before he lost consciousness in his friend’s upstairs bedroom. Having become sick during his last days in Africa, he wanted to stop in London on his way home, but an airline agent declined to change his ticket. On the next leg of his journey, a flight attendant observed that Roach had a fever and chills and suggested that he might have malaria. After landing in Los Angeles, he visited a walk-in clinic. “Do I have malaria?” he asked. No, he was told when his urine showed red cells. You have a kidney stone, maybe a urinary tract infection. Take this antibiotic, just in case.

Finally, he reached Lake Tahoe, fell into a feverish sleep, and didn’t wake up. Three weeks later, Roach was discharged from the hospital. His dialysis catheter came out the following month.

Today, if he could turn back the clock, Eddie Roach would faithfully down antimalarial pills in Uganda. But when he began his trip, his mind was elsewhere.

For starters, despite the fact that he had completed previous “clean water” assignments in Haiti, Burma, and Cambodia and taken previous trips to Africa, Roach’s knowledge about malaria was sketchy, and he feared possible side effects from preventive medication. Second, he was focused on saving other people’s lives, not protecting his own.

In the past decade, interest in global health has surged — not just among medical students, residents, and seasoned physicians,



but among lay humanitarians as well. The growing number of applications for overseas travel grants and the increasing proportion of medical students completing international health electives are two indicators of the new enthusiasm.¹ In 2009, 29.9% of graduating U.S. medical students had had an international health care experience, reflecting a 35% jump over a 5-year period.²

But these numbers only hint at larger trends. As a tropical medicine specialist who also teaches on a university campus, I am struck by the opportunities

for international service now available to undergraduates and other volunteers of all ages. By the time they take my global health seminar, many students majoring in international development have already worked abroad, often in health-related programs. Patients with no formal health care skills have provided post-disaster care in Asia and Haiti; church groups have journeyed to sub-Saharan Africa to comfort patients with HIV–AIDS and their children.

For many years, I have also provided pre- and post-travel care to medical and international development professionals. Today, this group includes not just aid workers and researchers headed overseas but also many doctoral students, medical trainees, and practicing physicians. Unlike lay volunteers, professional health care workers often know about the vaccines they need and about the vectorborne threats in the regions where they’re headed, but they may still avoid taking precautions. For example, according to a report on one group of expatriate workers that was returning from missions for the International Committee of the Red Cross in sub-Saharan Africa, 35% of the participants had not taken the recommended malaria prophylaxis.³ In addition, both lay and professional aid workers are sometimes careless or naive about other overseas risks, whether from environmental hazards, health care–associated injuries, or road accidents.

Take the simple act of wading or swimming in fresh water,

which in some tropical locales can result in the acquisition of schistosomiasis. Dr. Terrie Taylor, a malaria researcher who has lived part-time in Malawi for 24 years, has counseled hundreds of medical students, residents, and other visitors on the risk of schistosomiasis and ways to be “water-safe” in her second home. Nonetheless, she recently told me, “Lots swim in Lake Malawi — it is irresistible. They generally buy locally sold praziquantel . . . and take it 3 to 6 months later.” Granted, the risk of getting schistosomiasis in this situation is small, and although the efficacy of post-exposure praziquantel has never been formally studied, many people who are incubating schistosomiasis can abort infection with an ad hoc dose or two (assuming that they procure a high-quality, non-counterfeit drug) or, at worst, end up with a treatable case of granulomatous colitis or cystitis. On the other hand, empirical treatment may come too late to prevent harm. Sometimes I wish I could introduce certain risk takers to Dr. Deane DeFontes, a former Peace Corps volunteer who contracted schistosomiasis in Sierra Leone in the 1980s. DeFontes, who later attended medical school at UCLA and now practices family medicine in Oregon, is paraplegic as a result of his infection.

Yet an impetuous dip in parasite-laced waters — or exposure to any exotic blight, for that matter — is not the greatest danger facing modern global health workers. Today, the road to the clinic or the clinic itself may pose a greater hazard. For some years, I have tried to remind all travelers that injuries are the second leading cause of death (after cardiovascular disease) among Amer-

icans abroad; currently, traffic accidents involving some combination of cars, buses, motorcycles, bicycles, trucks, and pedestrians lead the list — particularly in developing countries.⁴ Medical workers must also be prepared for further potential causes of injury — namely, needlesticks and other occupational exposures to patients’ blood and body fluids.

Not long ago, I reconsidered this problem after meeting with four young residents. Having arranged month-long electives at an African teaching hospital where many patients are infected with HIV, each of the residents requested a personal 28-day supply of antiretroviral drugs for possible post-exposure prophylaxis (PEP). One trainee, as further justification for such a cache, added that she hoped to perform a lot of procedures during her stay.

My first reaction was to worry about cost (a single course of PEP can be almost as expensive as round-trip airfare to Africa), but then I learned, to my surprise, that health insurance would cover the residents’ prescriptions. Next, I wondered whether African doctors at the host facility were able to obtain similar treatment for high-risk occupational exposures. Ultimately, after soliciting input from colleagues, I acknowledged the wisdom of providing each trainee with a supply of drugs that, if unused, might be donated to a house officer on site or to a colleague back at home intending to travel to a similar site. Of course, making that decision was the easy part: providing timely, reliable post-exposure counseling and testing to overseas students and residents after a needlestick or similar injury presents a far tougher challenge.⁵

The truth is that I’m all for overseas experiences. Such ventures changed my life when I was young, and they continue to change lives both here and abroad. I’m also excited about the new zeal to improve global health, which some observers see as a manifestation of unprecedented global altruism. Nonetheless, not everyone who wishes to work in developing countries is a suitable candidate for such an assignment, and enthusiasm for international service should not blind anyone to its risks. One way to mitigate risks is to put in place a well-informed, carefully structured process of screening, education, supervision, and pre- and post-travel care — for which sponsoring organizations must increasingly take responsibility.

Disclosure forms provided by the author are available with the full text of this article at NEJM.org.

From the Program in Global Health, Division of Infectious Diseases, and the Department of Medicine, David Geffen School of Medicine, University of California, Los Angeles.

1. Panosian C, Coates TJ. The new medical “missionaries” — grooming the next generation of global health workers. *N Engl J Med* 2006;354:1771-3.
2. Division of Medical Education. GQ Medical School Graduation Questionnaire: all schools summary report: final. Washington, DC: Association of American Medical Colleges, 2009. (<https://www.aamc.org/download/90054/data/gqfinalreport2009.pdf>)
3. Dahlgren AL, Deroo L, Avril J, Bise G, Loutan L. Health risks and risk-taking behaviors among International Committee of the Red Cross (ICRC) expatriates returning from humanitarian missions. *J Travel Med* 2009; 16:382-90.
4. Sleet DA, Wallace LJD, Shlim DR. Injuries and safety. In: Brunette GW, Kozarsky PE, Magill AJ, Shlim DR, eds. *CDC health information for international travel 2010: the yellow book*. Atlanta: Department of Health and Human Services, 2009:209-14.
5. Mohan S, Sarfaty S, Hamer DH. Human immunodeficiency virus postexposure prophylaxis for medical trainees on international rotations. *J Travel Med* 2010;17:264-8.

Copyright © 2010 Massachusetts Medical Society.