



INDIANA UNIVERSITY
CENTER FOR GLOBAL HEALTH

AMPATH Kenya Recommended Reading

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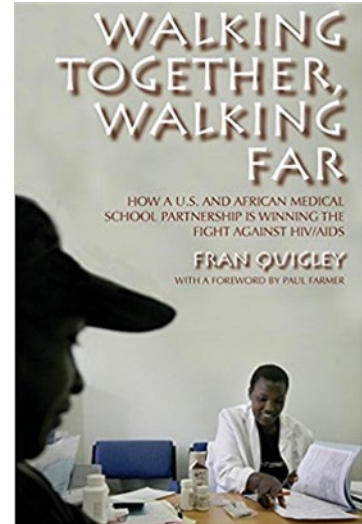


Recommended Reading for AMPATH Participants

HIGHLY RECOMMENDED FOR ALL PARTICIPANTS:

Walking Together, Walking Far. (2009) Quigley, Fran.

Written by Fran Quigley, this book details the history of AMPATH and explains how the combination of American resources and Kenyan ingenuity along with their shared determination to care for patients has created a model for how to tackle huge challenges. Foreword is written by Paul Farmer. This reading is required because it describes some of the origins of AMPATH in the IU-Kenya Partnership. It is a quick and easy read, likely taking only a few hours.



SUGGESTED READING

Unbowed: A Memoir. (2004) Maathai, Wangari.

2004 Nobel Peace Prize winner Wangari Maathai recounts her extraordinary journey from her childhood in rural Kenya to the world stage.

When Maathai founded the Green Belt Movement in 1977, she began a vital poor people's environmental movement, focused on the empowerment of women that soon spread across the African continent. Persevering through run-ins with the Kenyan government and personal losses, and jailed and beaten on numerous occasions, Maathai continued to fight tirelessly to save Kenya's forests and to restore democracy to her beloved country. Infused with her unique luminosity of spirit, Wangari Maathai's remarkable story of courage, faith, and the power of persistence is destined to inspire you and generations to come.

It's Our Turn to Eat: The Story of a Kenyan Whistle-Blower. (2009) Wrong, Michela.

This book tells the story of John Githongo, a Kenyan journalist and civil society activist who, in 2002, took on a senior anti-corruption role within the newly elected government of President Mwai Kibaki. In this role, Githongo uncovered widespread evidence of corruption (notably the Anglo-Leasing scandal) located high up within the Kibaki government. The book also discusses the role of ethnicity in Kenyan politics and is strongly critical of the response of the international aid community to the Githongo case.

Weep Not Child. (1969) Ngugi wa Thiong'o.

Ngugi wa Thiong'o is one of Kenya's best authors. He writes on political themes, so many of his books have been banned in Kenya. This novel is about the effects of the infamous Mau Mau uprising on the lives of ordinary men and women, and on one family in particular. Two brothers, Njoroge and Kamau, look into their futures: Njoroge is to attend school, while Kamau will train to be a carpenter. But this is Kenya, and the times are against them: In the forests, the Mau Mau is waging war against the white government and its collaborators, and the two brothers and their family need



to decide where their loyalties lie. For the practical Kamau, the choice is simple, but for Njoroge the scholar, the dream of progress through learning is a hard one to give up. Other highly recommended titles by Thiong'o include *Detained*, *Petals of Blood*, *A Grain of Wheat* and *Writer in Politics*.

Health, State and Society in Kenya. (2001) Ndege, George.

Examines conflicts brought on by western biomedicine in Kenya. Notions that the damage done by European imperialism in Africa was balanced by the provision of biomedical services is becoming harder to sustain. Studies have demonstrated several core indictments of colonial medicine: it was provided in a stingy manner; when it was provided to Africans, it was to help sustain the labor needs of the colony; and it provided better care for Europeans. Where some have argued that modern biomedicine has an inherent tendency to objectify the patient, students of colonial contexts have only seen such a tendency to be equal if not greater, because it was overlaid with dehumanizing racial ideologies. The colonial period coincided closely with the rise of the germ theory of disease, but the most noticeable effect of this in colonies was the theory's use as a rationale for racist segregation policies. Ndege elaborates these themes for the Kenyan context, and adds several others. Although Ndege argues that epidemic disease had a major role in spurring the colonial state to pursue segregationist policies, he also argues that germ theory played a minor role in this process. He shows that insensitivity to local cultural differences led to failures in preventive medicine. Finally, Ndege argues there has been continuity between colonial and postcolonial medical history. Colonial medical policies sought above all to promote the health of the colonial state itself. It is only a slight exaggeration to say that public health benefits for Kenyans were incidental.

Kenya: Between Hope and Despair, 1963-2011. (2011) Branch, Daniel.

On December 12, 1963, people across Kenya joyfully celebrated independence from British colonial rule, anticipating a bright future of prosperity and social justice. However, during its first five decades Kenya has experienced assassinations, riots, coup attempts, ethnic violence and political corruption. The ranks of the disaffected, the unemployed and the poor have multiplied. Daniel Branch sheds light on the nation's struggles and the complicated causes behind them. Branch describes how Kenya constructed itself as a state and how ethnicity has proved a powerful force in national politics from the start, as have disorder and violence. He explores such divisive political issues as the needs of the landless poor, international relations with Britain and with the Cold War superpowers, and the direction of economic development. Tracing an escalation of government corruption over time, the author brings his discussion to the present, paying particular attention to the rigged election of 2007, the subsequent compromise government, and Kenya's prospects as a still-evolving independent state.

Things Fall Apart. (1958) Achebe, Chinua.

The seminal African novel in English. Although there were earlier examples, notably by Achebe's fellow Nigerian, Amos Tutuola, none has been so influential, not only on African literature, but on



literature around the world. Its most striking feature is to create a complex and sympathetic portrait of a traditional village culture in Africa. Achebe is trying not only to inform the outside world about Ibo cultural traditions, but to remind his own people of their past and to assert that it had contained much of value. All too many Africans in his time were ready to accept the European judgment that Africa had no history or culture worth considering.

HISTORY OF KENYA

Any history of Kenya It is absolutely essential that every student, resident, or faculty who visits Kenya have a reasonable understanding of Kenyan history, cultures, and traditions. Acquiring this understanding before going to Kenya will make it more likely that you will have a successful and rewarding time in Eldoret. Some good Kenyan historians are Atieno Odhiambo, Tabitha Kanogo, David Anderson, Jean Davidson, and Charles Hornsby.

TROPICAL MEDICINE

Lecture Notes: Tropical Medicine: A solid clinical resource for tropical diseases. Easy to read. Helpful as a resource for didactics sessions and for patient care.

Oxford Handbook of Tropical Medicine: very useful to have in your pocket during the rotation

OTHER BOOKS

Title	Author
<u>Africa</u> It has been reprinted many times and has some interesting things on Kenya.	Ungr, Sanford
<u>Africa: Dispatches from a Fragile Continent</u> Controversial book. It has some unkind things to say about Moi.	Harden, Blaine
<u>Global Inequalities</u> This book, published in 1996, was written by two professors of sociology at IU-Bloomington. If you do not have time to read the entire book, read the chapter "A Continued Decline?" The chapter gives a succinct overview of many of the problems Africa faces.	Bradshaw & Wallace
<u>The Poisonwood Bible</u>	Kingsolver, Barbara
<u>AIDS in Africa (2 nd Edition)</u>	Essex, Max
<u>Training in Developing Nations</u>	Daly, John L.
<u>AIDS in the Twenty-First Century</u>	Barnett & Whiteside



<u>The Lunatic Express</u>	Miller, Charles
<u>Ethics and AIDS in Africa. The Challenge to our Thinking</u>	van Niekerk, Anton
<u>The Flame Trees of Thika</u>	Huxley, Elspeth
<u>Red Dust on the Green Leaves</u>	Gay, John
<u>Class and Economic Change</u>	Kitching, G.N.
Kenya	
<u>A Grain of Wheat</u>	Ngugi wa Thiong'o
<u>Kenya's Democratic Transition</u>	Mullei, Andrew
Congo	
<u>King Leopold's Ghost: A Story of Greed, Terror, and Heroism in Colonial Africa</u> The story of how King Leopold II of Belgium seized the vast area surrounding the Congo River.	Hochschild, Adam
Nigeria	
<u>The Joys of Motherhood</u>	Emecheta, Buchi
<u>Stars of the New Curfew</u>	Okri, Ben
Zimbabwe	
<u>Nervous Conditions</u>	Dangarembga, Tsitsi
<u>Witches, Westerners and HIV: AIDS and Cultures of Blame in Africa</u>	Rodlach, Alexander
South Africa	
<u>In the Fog of the Seasons End</u>	La Guma, Alex
<u>None to Accompany Me</u>	Gordimer, Nadine
<u>Playing in the Light</u>	Wicomb, Zoe
Cameroon	
<u>Life and Death in Kolofata: An American Doctor in Africa</u>	Einterz, Ellen
General Global Health	
<u>Mountains Beyond Mountains: The Quest of Dr. Paul Farmer, a Man Who Would Cure the World</u>	Kidder, Tracy



KISWAHILI AND TRAVEL RESOURCES

There are several Kiswahili language texts/primers on the market, including Twende by Joan Maw and Teach Yourself Swahili by D. V. Perrott. Twende is a standard textbook and Teach Yourself Swahili is a basic primer. For purposes of quickly learning on your own a basic understanding of the language and rudimentary vocabulary and phrases, Teach Yourself Swahili is best. Some prefer Simplified Swahili, published by Longman Ltd. in England. It may be difficult to obtain in the US, but new Swahili textbooks can be found on the NALRC website at U. Wisconsin-Madison.

There are several guide/tourist books on the market as well. A favorite has been The Real Guide to Kenya (also printed overseas as the Rough Guide to Kenya). Many travelers use the Lonely Planet guide to Kenya. They also publish a good map. There are usually extra copies of these at the IU House in Eldoret, but please do not take them with you on your travels.

WEBSITES

Daily Nation (Kenya newspaper)	https://www.nation.co.ke/
US Embassy in Kenya	https://ke.usembassy.gov
US State Department	https://travel.state.gov/content/travel/en/international-travel/International-Travel-Country-Information-Pages/Kenya.html
CDC: Kenya Information	https://wwwnc.cdc.gov/travel/destinations/traveler/none/kenya
USAID Country Profile	https://www.usaid.gov/sites/default/files/documents/1860/14.%20Kenya%20Country%20Profile.pdf
Lonely Planet	www.lonelyplanet.com/destinations/africa/kenya/
Regional Maps	www.reliefweb.int/mapc/afr_east/
GlobeSmart (includes country profile for Kenya and work style survey and country comparison)	https://drive.google.com/file/d/14Gg-vuibnX71xe8CAxtWtczgr7e3nKl7/view?usp=sharing

MOVIES

<i>The First Grader</i> (2010)	The story of an 84-year-old Kenyan villager and ex Mau Mau veteran who fights for his right to go to school for the first time to get the education he could never afford.
<i>Babies</i> (2010)	A look at one year in the life of four babies from around the world, from Mongolia to Namibia to San Francisco to Tokyo.

* Have suggestions for the recommended reading list? Email Jenny Baenziger, MD (jbaenz@iu.edu)





The Partnership Between Indiana University School of Medicine and Moi University School of Medicine

by AMPATH staff, 2017

Introduction

The partnership between Indiana University in the United States and Moi University in Kenya represents a unique model. Since 1989, Indiana University School of Medicine and Moi University School of Medicine (MUSM) in Eldoret, Kenya have collaborated to promote collegial relationships between American and Kenyan medical doctors, scientists, and students, and to develop leaders in health care in Kenya and the United States. The mission of this new partnership was to develop leaders in health for the United States and Africa, foster the values of the medical profession, and promote health and well-being in both countries.

This medical school-medical school partnership is built on the premise that individual and institutional good derives from the integrity of individual counterpart relationships. The IUSM-MUSM partnership emphasizes bilateral exchange, mutual benefit, and long-term commitment. The partnership is departmentally based and integrated across multiple disciplines and throughout all levels of both institutions from student body to Department Heads and Deans. Funding comes from multiple sources including philanthropic support.

The IUSM-MUSM collaboration is an equitable partnership that helps to satisfy Moi University's need for additional academic instructors, while at the same time creating opportunities for professional and personal development and scholarly achievements by medical faculty, staff, and students at both institutions. While demonstrating the power of medical education to improve the lives of vulnerable populations, the IUSM-MUSM partnership fosters the tripartite academic mission of care, education and research and promotes the values of the medical profession: integrity, service, intellectual inquiry, academic freedom, and responsible citizenship.

Institutional Partners

MUSM, one of only two medical schools in Kenya, enrolled its first class of students in late 1990, graduating them in 1997. Currently, MUSM admits 80-110 students per year, selected from the best and brightest high school graduates in a country with over 44.6 million people and only 18 medical doctors per 100,000 inhabitants. The school has adopted and refined an innovative, six-year curriculum designed to produce well-trained medical doctors to serve Kenya's urban and large rural populations. This curriculum emphasizes problem-based learning and community based education and service (COBES).

Indiana University School of Medicine was established in 1903 and has developed into one of the nation's largest and premier medical centers. IUSM occupies an 85-acre campus with four general medical-surgical hospitals, Indiana's primary pediatric hospital, a psychiatric hospital and a number of





unique teaching and research facilities. IUSM faculty and students also work in a large number of urban- and rural-based community health centers and offices. IUSM graduates over 275 medical doctors each year. Medical students pursue a four-year, competency-based curriculum.

Program Overview

Individual, collaborative relationships form the cornerstone of the IUSM-MUSM program. Each American visitor in Kenya endeavors to link with his/her appropriate counterpart. For example, IUSM physicians in Kenya work with their Kenyan colleagues under the direction of the Kenyan department head. IUSM medical students work and live with Kenyan medical students, and IUSM post-graduate physicians in training, or residents, work alongside Kenyan medical officers and interns. Counterpart relationships are similarly emphasized when Kenyan faculty and students visit IUSM.

Indiana University supports multiple positions on-site in Eldoret. The Executive Field Director maintains a permanent presence on site and oversees all of IU's activities on-site in Kenya. The Executive Field Director is Adrian Gardner. The Medical Liaison or Team Leader supervises all visiting residents and students and coordinates the medical activities of all visiting faculty members. The Team Leader is Tim Mercer MD (Internal Medicine). Tim is joined by Katherine MacDonald, MD (Pediatrics). The Program Administrator, Dunya Karama, provides logistic/scheduling support and runs the IU Houses. John Sidle, MD (Med/Peds) and Suzanne Goodrich serve as co-Field Directors of Research. They oversee and coordinate on-site all of IU's research activities. Sarah Ellen Mamlin heads the Sally Test Pediatric Center and supports outreach to children on the Nyayo wards and in several orphanages. IUSM's Division of General Internal Medicine and Geriatrics coordinates all travel and work schedules, and maintains a fourteen-unit housing compound and a fleet of vehicles in Eldoret.

The IUSM-MUSM partnership enables the residents of IUSM's training programs to take eight-week electives in Eldoret under the supervision of the IUSM Medical Liaison. Since 1990, nearly 500 residents have participated in elective rotations in Kenya. Most of the residents are in primary care training programs at IUSM. While at Moi University, the residents' responsibilities include patient care, teaching, research and public health activities in the Moi Teaching and Referral Hospital and urban and rural health centers. While in Kenya, IUSM residents establish collegial relationships with junior Kenyan doctors and help teach Kenyan medical students. Residents consistently describe the experience in Kenya as "life-changing" and rate the elective as one of the premier experiences of their residency training.

In 1994, an elective opportunity for senior medical students was introduced. Since then, more than 400 senior students have taken clinical electives at Moi University. A two-month long summer "Slemenda Scholar" elective for sophomore medical students was introduced in 1998. Two to five sophomores participate in this program each year. Two sophomores will travel to Kenya in the summer of 2016.

The majority of IUSM faculty participating in the IUSM-MUSM program is from the Department of Medicine; however, additional IUSM departments and divisions have played significant roles. The





Department of Pediatrics has contributed both faculty and financial support. IUSM's Departments of Pathology, Otolaryngology, Oncology, Dermatology, Anesthesiology, Family Medicine, Psychiatry, Radiology, Obstetrics/Gynecology and Surgery have each contributed to Kenyan faculty development in Kenya and Indiana. One member of the IUSM Department of Surgery served five years in Eldoret. Currently, the IUSM Department of Surgery supports a full-time surgeon who oversees IU's efforts and collaboration with MTRH surgeons. Basic scientists at Indiana University's regional centers for medical education have supported bilateral faculty exchange. New collaborations are forming with Public Health, Nursing, Social Work, Liberal Arts, Social Sciences, Dentistry, Physical Education and Tourism.

Many internists from US academic medical centers other than IUSM have traveled to Eldoret under the auspices of the IUSM-MUSM program to participate in teaching and service activities. This has resulted in creation of the AMPATH (Academic Model Providing Access To Healthcare) Consortium, a collaboration of other institutions (Brown, Duke, Toronto, Purdue, Notre Dame, UMass, and UCSF) along with academically affiliated, medical training centers (Portland-Providence, Oregon; Lehigh Valley, Pennsylvania; Mt. Sinai Medical Center, New York) that have made long-term commitments with IUSM to MUSM.

While the majority of this exchange occurs from the US to Eldoret, IUSM and its North America partners in the AMPATH consortium provide full scholarship support each year for selected MUSM students (18 in 2015) to participate in 6 week electives in North America. More than 110 Kenyan faculty members and post-graduate trainees have also been supported by IUSM to visit Indiana medical centers for the purpose of faculty development and collaborative research.

While the underlying commitment to developing future leaders in health in both the US and Kenya remains the primary mission of the IU Center for Global Health, the IU-Kenya Partnership and AMPATH, combating the HIV/AIDS pandemic has been the current focus for the last ten years. For the past 4-8 years, we have been focusing on "lateral expansion", that is, leveraging our success fighting HIV/AIDS to build more effective primary care systems that can respond particularly to the needs of women and children. Previously, AMPATH represented Academic Model for the Prevention of HIV and AIDS, but for the past eight years, it represents a more comprehensive approach to healthcare in Kenya and has become the Academic Model Providing Access to Healthcare. The ensuing document (pg.14) contains a more in-depth description of the work.

Sustainability

Funding for the IU-Kenya program and AMPATH comes from a number of sources. The program was initially contained in IUSM's Division of General Internal Medicine and Geriatrics with funds coming from pooled clinical income and the Moore Foundation, a local private foundation. Currently, the partnership derives funding from a broad base including federal grants such as the Presidents Emergency Plan for AIDS Relief (PEPFAR), individual donations, local Indianapolis institutions and private and public foundations. Multiple departments at IUSM have provided departmental funds to support exchange of selected faculty and residents. Individual private donations have enabled a number of projects in Kenya.





Indiana University faculty, residents, and students working in Eldoret do not accept any salary, travel reimbursement, or means of support of any kind from Moi University or the government of Kenya. Individual and foundation contributions have been essential in building this program, and donations are always needed and gratefully accepted.

Outcomes

Scholarly Achievements

Numerous grants from U.S. federal agencies and several foundations have funded faculty and student exchange and the development of clinical, teaching, and research personnel and programs in Kenya, especially for HIV prevention and treatment. The President's Emergency Plan For HIV/AIDS Relief (PEPFAR) pledged more than \$60 million to ramp up HIV prevention and treatment efforts at over 61 sites in Kenya. The partnership has completed multiple collaborative projects including an extensive evaluation of the first decade of the curriculum at Moi University School of Medicine. The partnership has also produced numerous publications and presentations co-authored by Americans and Kenyans. Publications have focused on a range of topics including medical informatics, medical education, basic sciences research, and clinical, epidemiological and health services research.

Program Enhancement and Development in Kenya and at MUSM

Through philanthropic development spearheaded by IUSM, MUSM funds a work-study program for medical students in Eldoret, tuition reimbursement scholarships for impoverished medical students, leadership and merit scholarships for Kenyan medical students, and awards to promote Kenyan women in medicine. In the current year, using funds provided by IUSM, MUSM supports over 50 students in work-study and over 50 full tuition scholarships. IUSM with its US consortium partners also provides full funding to enable 18 MUSM and 2 dental students to take elective rotations in North America. Additional funds have supported Kenyan research and faculty development, community-based education and service, and the limited procurement of educational resources, medical equipment, and medicines.

A new surgical suite, including four operating rooms and recovery facilities, was built at MUSM with the support of a unique collaboration between IUSM and Second Presbyterian Church in Indianapolis. The operating theatres were needed to fulfill both service and education needs. AMPATH recently opened the Riley Mother and Baby Hospital, located at Moi Teaching and Referral Hospital. In 2005, the AMPATH Centre, an 80,000 square foot building dedicated to HIV care, training and research opened to provide care and treatment to HIV-positive patients. Both of these major construction and building projects were funded mostly by private philanthropic donations. The development of the first outpatient electronic medical record in sub-Saharan Africa was a particularly key achievement for the partnership. The electronic AMPATH Medical Record System successfully bridged the "digital divide" and has evolved into the information system supporting clinical and research activities in the partnership's HIV clinics. In October 2015, a new Chandaria Cancer and Chronic Disease Centre building featuring state of the art oncology and cardiac care units opened. Soon radiotherapy treatments will also be





available on site, the first such facility outside of Nairobi. The new center has been constructed entirely from philanthropic support.

Personal and Professional Development

The IUSM-MUSM partnership promotes responsible citizenship and health for the human family and fosters integrity, service to others, and intellectual growth. All participants in the collaboration emerge as changed persons, enriched with these core values.

We have assessed the effect of the program on US faculty members, residents and students using survey instruments completed by selected participants, reports written by all students, and interviews with most of the participants upon their return to Indiana.

Program participants report that their experience in Kenya had some value in improving history-taking skills, broadening general medical knowledge and improving diagnostic skills.

Enhancement of teaching skills seems to be a significant outcome of the “Kenya experience.” Most faculty members who stayed for a month or more, indicate that the experience significantly enhanced their teaching or mentoring.

Most participants note improvement of stateside job satisfaction as an important outcome of their time in Kenya. How long they stayed does not seem to affect the impact of the international experience in this area.

For Americans, the experience affects their use of personal time and appears to influence community involvement and citizenship at home.

Personal beliefs and family relationships may be the areas in which participants feel that the experience is of most significance.

According to exit interviews and evaluations completed by Kenyan students and faculty members who spent time in the US, the experience reinforces their commitment to certain aspects of their own curriculum and exposes them to different attitudes toward work, different styles of teaching and leadership, and a different organizational construct.

The Kenyan faculty participants report that their experiences increase creativity in solving problems in health care delivery and make them less accepting of the status quo in Kenya. Importantly, Kenyan faculty and students note that the partnership is fair and equitable.

An NIH special emphasis panel charged with reviewing the partnership in the context of a grant review gave the partnership a superior rating. According to one of the reviewers, the partnership “serves as a model program for how collaboration between U.S. institutions and those in developing countries can be established, nourished, maintained, evaluated and enhanced....This linkage has been developed in





such a way that the interests of Moi University and the people of Kenya have been kept uppermost.”
[Personal communication, NICHD Special Emphasis Panel, ZHD1 DSR-R (TW), 1/22/2001]

Miscellaneous Achievements

Spouses and partners traveling with IUSM personnel working in Kenya have been involved in many community outreach projects. They have donated time and resources to several schools and orphanages. They have promoted hospice care for dying patients and provided hospitality, comfort, and educational services for children on the pediatric wards of the Moi Teaching and Referral Hospital. IUSM has also made it possible for selected patients to obtain lifesaving surgery in the U.S.

AMPATH

Our Model: Starts with Healthcare

The academic health centers that make up AMPATH are uniquely situated to pursue a tripartite mission of care, training, and research, three components which are all essential for successfully addressing the short and long-term challenges of global health. While training and research are critically important to our program, AMPATH has always been determined to “lead with care.” Care is not only our most pressing obligation when faced with the needs of a horribly under-served population, it is the foundation upon which the necessary training and research is conducted.

AMPATH was created in response to the challenge of providing life-saving care in the face of the HIV pandemic. AMPATH has enrolled over 160,000 HIV-positive persons, with almost 2,000 new patients being enrolled each month at over 500 urban and rural clinic sites throughout western Kenya. But, just as importantly, AMPATH has reached one million people through a home-based counseling and testing program that enjoys a 97+% rate of acceptance into the homes it visits, and has been able to lower mother-to-child transmission of HIV/AIDS to lower than 4%. Through prevention and early treatment programs like these, we are demonstrating a community-based effort that can virtually halt the spread of HIV/AIDS.

In partnership with the Kenyan Ministry of Health, AMPATH has expanded from an HIV focus to address the critical needs for primary healthcare, chronic disease care, and specialty care. Over 10,000 newborn deliveries take place each year in the new Riley Mother and Baby Hospital in Eldoret, nearly 10,000 patients visit the new oncology clinic annually, over 1,500 patients are enrolled in the program’s diabetes outreach, and Centers for Excellence have been developed in cardiovascular disease and mental health.

Our Mission: Care, Research, Training

Academic health centers are uniquely situated to pursue the tri-partite mission of care, training and research, three components which are all essential for successfully addressing the short and long-term challenges of global health. Training (over 1,200 Kenyan and American medical students have participated in the program and thousands of Kenyan health care providers have been trained by AMPATH) and research (AMPATH researchers have published over 275 peer-reviewed publications and





attracted over \$83 million in cumulative funding for AMPATH-related research projects from NIH, CDC, and other sources) are critical components of that effort, and we are dedicated to leading with care. This mission of care, research, and training is embraced by institutions like Brown University's Alpert Medical School, Purdue University, Duke University Medical Center/Hubert-Yeargan Center for Global Health, Lehigh Valley Hospital, Providence Portland Medical Center, Mt. Sinai Medical Center, University of Notre Dame, University of Massachusetts, UCSF and University of Toronto Faculty of Medicine, who all have joined together with Indiana University as the AMPATH Consortium to partner with the Moi Hospital and University, allowing the Kenyan leaders to draw upon the resources and talents of North American academic health institutions to tackle the challenges of disease and poverty.

Our Programs: Holistic, Sustainable

In AMPATH's definition of "healthcare," the focus is on the patient, not the disease. If a patient is hungry, or without a job, or is the victim of discrimination or abuse, AMPATH will respond, a commitment that leads inexorably toward holistic care. Therefore, AMPATH not only treats over 60,000 HIV-positive persons at more than 500 urban and rural clinic sites throughout western Kenya. We also have developed innovative programs to assure food and income security for thousands of individuals, including organizing more than 2,000 farmers into cooperatives that have successfully competed for contracts with the World Food Programme. We provide school fees, nutrition, and other assistance to over 20,000 children left orphaned or vulnerable due to HIV/AIDS. We also conduct prevention and early treatment programs that demonstrate a community-based effort that can virtually halt the spread of HIV/AIDS.

Local leadership is the key to sustainability of any global health effort, so all of AMPATH's programming is led and implemented by Kenyans. Sustainability is a core component of AMPATH at every level, as evidenced by the use of an advanced electronic medical record system to enable cost savings through task-shifting in clinical care (over 100 sites globally now host the AMPATH-originated Open Medical Records System, OpenMRS), overall program integration with the Kenyan government through our new partnership with the Ministry of Health, and our focus on developing income security for patients who will one day be able to pay for the care they receive.

Conclusion

The IU Kenya-AMPATH partnership provides an important affirmation of each medical school's commitment to the world community. The success of the partnership reveals the promise such collaborative projects hold for the development of tomorrow's medical leaders, both within Africa and North America.



Responding to the HIV Pandemic: The Power of an Academic Medical Partnership

Robert M. Einterz, MD, Sylvester Kimaiyo, MB, ChB, MMED, Haroun N.K. Mengech, MB, ChB, Barasa O. Khwa-Otsyula, MB, ChB, Fabian Esamai, MB, ChB, Fran Quigley, JD, and Joseph J. Mamlin, MD

Abstract

Partnerships between academic medical centers (AMCs) in North America and the developing world are uniquely capable of fulfilling the tripartite needs of care, training, and research required to address health care crises in the developing world. Moreover, the institutional resources and credibility of AMCs can provide the foundation to build systems of care with long-term sustainability, even in resource-poor settings.

The authors describe a partnership between Indiana University School of Medicine and Moi University and Moi Teaching and Referral Hospital in Kenya

that demonstrates the power of an academic medical partnership in its response to the HIV/AIDS pandemic in sub-Saharan Africa. Through the Academic Model for the Prevention and Treatment of HIV/AIDS, the partnership currently treats over 40,000 HIV-positive patients at 19 urban and rural sites in western Kenya, now enrolls nearly 2,000 new HIV positive patients every month, feeds up to 30,000 people weekly, enables economic security, fosters HIV prevention, tests more than 25,000 pregnant women annually for HIV, engages communities, and is developing a robust electronic information system.

The partnership evolved from a program of limited size and a focus on general internal medicine into one of the largest and most comprehensive HIV/AIDS-control systems in sub-Saharan Africa. The partnership's rapid increase in scale, combined with the comprehensive and long-term approach to the region's health care needs, provides a twinning model that can and should be replicated to address the shameful fact that millions are dying of preventable and treatable diseases in the developing world.

Acad Med. 2007; 82:812–818.

As physicians and academicians, it is our privilege and our responsibility to provide services to our patients and their communities, to nurture and inspire our students and trainees, and to examine and understand the complexities of our world. The power of this tripartite academic mission is particularly evident in the collaborative response of some academic medical centers (AMCs) and large public hospitals to the health problems of uninsured populations in the United States. Over the last several decades, for example, the political and academic leaders of the city of Indianapolis leveraged the entrepreneurial and intellectual energy of the city's academic community to respond meaningfully to the health needs of a broad swath of its most vulnerable population. A comprehensive care system was established in affiliation with the public hospital and a number of community-based health centers.¹ Those sites, in turn, became laboratories for

research and classrooms for training generations of health professionals dedicated to providing a single standard of care for all persons. Though much work needs to be done, we can look proudly at many such achievements of AMCs across the United States.

Sub-Saharan Africa, in contrast, is facing an HIV/AIDS crisis—one of the most devastating pandemics in human history—and has yet to realize the power of its AMCs. The reasons for this oversight are many: inadequate collaboration and communication between the ministry of health and ministry of education in many countries, inadequately prepared managers and leaders, systems that are ill equipped and/or inadequately structured to manage and deliver complex and comprehensive programs, and a pervasive, insidious feeling of fatalism. The failure of most African countries in the 1990s to control the HIV/AIDS pandemic is self-evident. And, even with the advent of the Global Fund and the President's Emergency Plan for AIDS Relief in the current decade, the number of success stories in Africa is far too few. It is ironic that AMCs have failed to engage fully against the pandemic that is sweeping the African continent,

because they are the only resource in Africa and the United States capable of simultaneously providing service, mobilizing manpower, teaching, and conducting research.

In this article, we will describe a unique and replicable model of a partnership between an American AMC and its African counterpart that created and implemented a successful, comprehensive system to control the HIV/AIDS crisis in western Kenya. We will describe the nature of the partnership, the growth of the HIV/AIDS-control system, our responses to the obstacles faced in building and sustaining the system, and the lessons we learned. We will illustrate the synergistic capacity of two AMCs to respond effectively to thousands of people dying of treatable and preventable diseases in Kenya, and we will challenge the donor community and our colleagues around the world to awaken the dormant power of AMCs across our globe.

The Indiana–Moi Partnership

At its inception in 1990, Moi University Faculty of Health Sciences (now named Moi University School of Medicine), the second medical school in Kenya, did not

Please see the end of this article for information about the authors.

Correspondence should be addressed to Dr. Einterz, Wishard Hospital, OPW M200, 1001 W. 10th Street, Indianapolis, IN 46202; e-mail: (reinterz@iupui.edu).

have a sufficient number of Kenyan faculty members and was seeking expatriate clinical teachers and institutional partners. At the same time, three general internists from Indiana University School of Medicine (IUSM) with long-term volunteer experience in developing countries were seeking to develop a relationship between Indiana University and a medical school in sub-Saharan Africa. Their aim was to develop leaders in health, foster the values of the medical profession, and foster health for the human family in this developing region. Led by these three faculty members, Indiana University's Division of General Internal Medicine committed to keeping at least one of its faculty members on site in Kenya. IUSM faculty members in Kenya serve under the direction of the Kenyan head of department and share with their Kenyan counterparts responsibilities for clinical care, community based education and service, teaching, and research. Though the partnership's response to the HIV epidemic would not begin until 2000, the overarching focus on primary care and institution building during the partnership's first decade formed the framework for its HIV-control program.

Counterpart relationships at both individual and departmental levels are the keystone of the Indiana–Moi partnership.² The partnership currently involves collaboration among virtually all of the major disciplines at both medical schools, though the administrative issues of the IUSM portion of the partnership are handled primarily within its division of general internal medicine. After initial success with the Indiana–Moi partnership, IUSM sought to make a wider impact on academic medicine in sub-Saharan Africa. Since 1997, several other North American medical institutions have joined IUSM in a partnership called the America/sub-Saharan Africa Network for Training and Education in Medicine (ASANTE) Consortium. (*Asante* means *thank you* in Kiswahili, one of Kenya's two national languages.) This consortium currently includes IUSM, Brown Medical School, Duke University School of Medicine, Lehigh Valley Hospital and Health Network, Providence Portland Medical Center, the University of Utah School of Medicine, and the University of Toronto Faculty of Medicine. In total, more than 800 Kenyans and Americans have

participated in exchange of faculty members, postgraduate trainees, and students through the ASANTE Consortium. The partnership has had a major impact on delivery of health services, education, and research in Kenya, including dozens of jointly authored publications.^{3–36}

One of the philosophical underpinnings necessary to sustain the Indiana–Moi partnership is that all participants in the partnership expect and work for mutual benefit. We have discovered that altruism is a necessary but insufficient reason for either institution to continue in the partnership. To achieve mutual benefit, the institutional relationship strives for equity, not equality, because medical systems in the developed and developing world are inherently unequal. For example, IUSM does not expect financial commitment on the part of Moi University to support IUSM's participation. However, IUSM does expect its trainees and faculty members to be given the opportunity at Moi to benefit personally and professionally from involvement in the program.

In part, IUSM's role in the partnership follows a distinguished precedent of U.S. AMCs engaging their considerable resources in response to the needs of underserved populations. Many distinguished AMCs and large public general hospitals in urban areas of the United States have entered into relationships that produced mutual benefit for underserved populations and the collaborating AMCs.³⁷ But there is substantially less evidence of similar success when U.S. AMCs collaborate with counterparts in the developing world. Collaborations inspired by financial incentives to U.S. medical schools during the 1950s through the early 1960s were phased out because of problems with sustainability and a disproportionate focus on tertiary care.³⁸ Most current examples of successful collaboration between U.S. AMCs and their counterparts in the developing world have been limited to focused initiatives, especially shared research interests. These collaborations have largely failed to facilitate improvements in the developing country's health care system and have tended to overemphasize curative care relative to disease prevention and health promotion.³⁹

The Moi–Indiana system-building efforts also stand in contrast to short-term commitments from individual health care workers traveling to developing countries from the United States. Of course, these efforts can offer value to both the health care providers and the patients served.⁴⁰ However, lacking institutional backing and without connection to a long-term effort, these approaches cannot substantially contribute to the building of developing countries' health care systems. In response to this need for sustained system building, there have been many recent calls for partnerships between institutions in developed and developing countries to confront poverty-related diseases in developing countries.⁴¹ AMCs should be the leaders in responding to these calls, because such centers are uniquely capable of fulfilling the tripartite needs of care, training, and research required to foster health of individuals and their communities in the developing world. Disappointingly, however, funding often does not exist to encourage North American medical schools to join with counterparts in Africa to respond to health care crises and build systems of care. Our experience strongly suggests that government and philanthropic support should be directed toward long-term institutional partnerships that contribute to system building.

Academic Model for Prevention and Treatment of HIV/AIDS

The tragic scope of the HIV/AIDS pandemic is well known. In 2005, an estimated 38.6 million people worldwide were living with HIV, and an estimated 2.8 million lost their lives to AIDS. In Kenya, it is estimated that 1.3 million people are living with HIV.⁴²

The once-high cost of antiretroviral drugs, along with concerns about therapy adherence and the possible negative effect of antiretroviral therapy on risk behaviors, posed barriers to widespread HIV/AIDS treatment in sub-Saharan Africa. Many of those concerns have been addressed in recent years, and delivery of antiretroviral therapy has been successful in several settings in Africa.^{43,44}

However, sustaining effective antiretroviral therapy and controlling HIV/AIDS in a place like Kenya is a uniquely difficult challenge. Conditions in sub-Saharan

Africa require a system of care that must effectively address issues of poverty, hunger, gender discrimination, and stigma that present barriers to successful treatment and contribute to the spread of the disease. Establishing and maintaining that system of care is especially difficult in sub-Saharan Africa, which suffers from 60% of the world's HIV/AIDS burden but can call on only 1.3% of the world's health care workforce to confront the challenge.⁴⁵

Throughout its first decade, the Indiana–Moi partnership failed to respond systematically to the HIV/AIDS crisis. In fact, by 2000, we had failed to treat even one person with antiretroviral therapy. However, our successful treatment of a young Kenyan medical student dying of AIDS in 2001 inspired us to formulate a systemic response to the pandemic. Leveraging the power of our academic medical partnership, we established the Academic Model for the Prevention and Treatment of HIV/AIDS (AMPATH).⁴⁶

AMPATH has quickly become one of the largest and most comprehensive HIV/

AIDS-control systems in sub-Saharan Africa, providing a complete system of care that has been described as a model of sustainable development.⁴⁷ Delivery of services occurs in the public sector through hospitals and health centers run by Kenya's Ministry of Health. Through community engagement, education, promotion of safe-sex practices, experience-sharing by persons living with HIV/AIDS, counseling and testing, and other prevention activities, AMPATH touches the lives of millions in a wide geographic area. AMPATH has treated over 40,000 HIV-positive patients at 19 urban and rural clinical sites across western Kenya, currently enrolling nearly 2,000 new patients each month. (Figure 1) AMPATH feeds up to 30,000 people weekly and provides antenatal services that aim to prevent mother-to-child transmission of HIV in nearly 25,000 pregnant women annually. All eligible pregnant mothers in AMPATH's system are immediately referred for antiretroviral therapy. After delivery, all mothers are advised of the risks and benefits of exclusive breastfeeding or

exclusive formula feeding with respect to transmitting HIV to their children. Eligible mothers who choose exclusive replacement feeding for their babies are provided formula at no cost. Furthermore, innovative efforts have been implemented to ensure access to safe water.

Starting an HIV-care system from scratch and expanding it in five years to serve comprehensively more than 40,000 patients and their communities was a daunting task. As we tackled the pandemic in our region of Kenya, we faced a series of obstacles. However, because of our academic medical partnership, we were able to craft effective responses to each challenge.

Stigma

At rural health clinics in particular, we discovered that the stigma associated with HIV/AIDS impeded access to care. However, our already existing strong ties with village elders, opinion leaders, and health providers (established through community-based work not related to HIV throughout the previous decade),

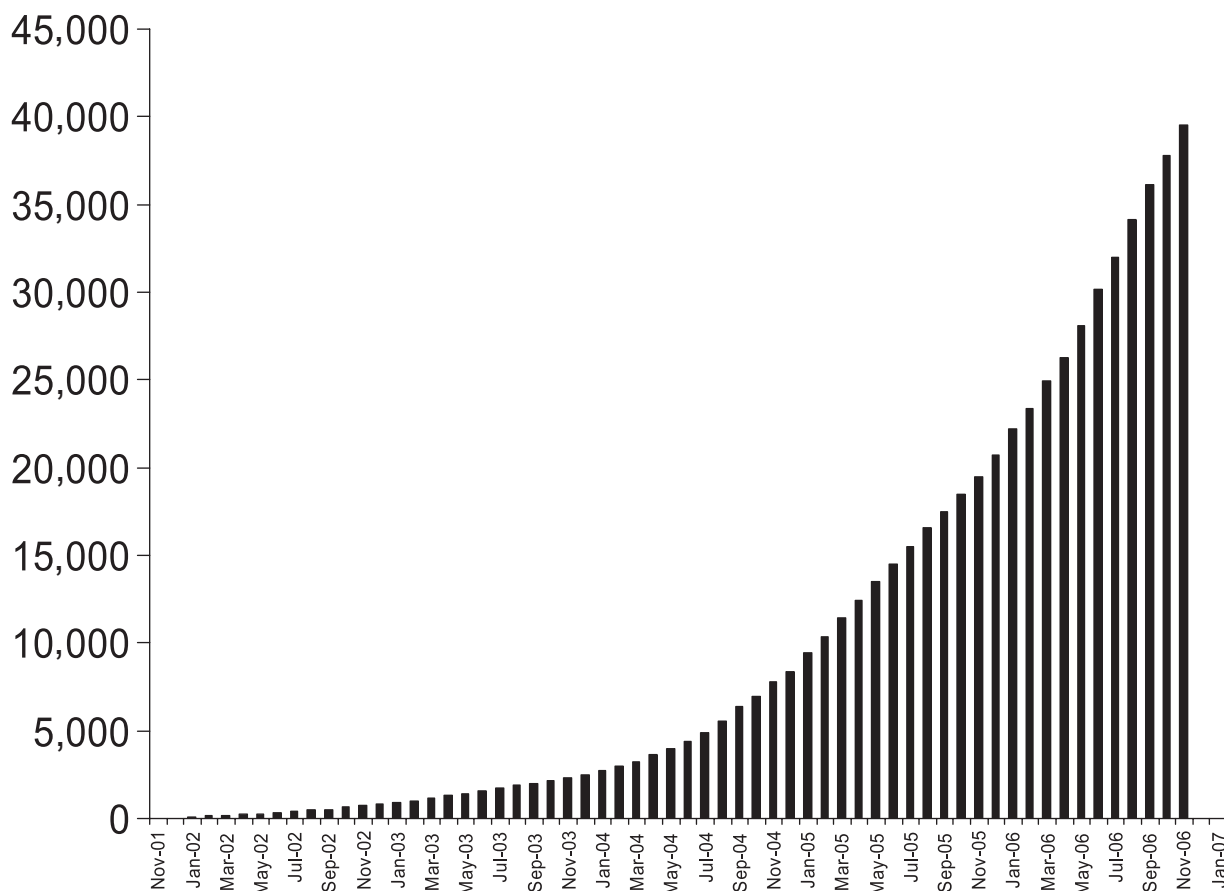


Figure 1 Cumulative number of persons infected with HIV enrolled in the Academic Model for the Prevention and Treatment of HIV/AIDS from November 2001 through January 2007.

along with some timely and visible success stories with early patients, allowed us largely to overcome that barrier. Other measures to confront stigma and enable prevention included community mobilization and health education, more aggressive community-based testing for the virus, and changes to HIV/AIDS-related policy in hospitals. Moi Teaching and Referral Hospital set the pace in Kenya for adopting policy that enabled opt-out HIV testing on all wards, predating by several years similar policy in the United States and in other sub-Saharan countries. Where we once offered HIV/AIDS screening and felt lucky if four or five people showed up, we now hold community-based rallies and test nearly a thousand people in a day. AMPATH has transformed whispers of shame and stigma into a community-wide embrace of people living with HIV/AIDS.⁴⁸

Food security

We found that, depending on location, between 20% and 50% of AMPATH's patients were hungry and lacked food. It was apparent that the physical limitations of living with HIV/AIDS had made it difficult for patients to work their small farms or take on outside jobs, and this left them and their families impoverished and malnourished. In response, we initially created a demonstration farm on 10 acres of land donated by a local high school. This farm, which we called the HAART and Harvest Initiative (*HAART* stands for *highly active antiretroviral therapy*), had a dual purpose: it enabled farmers to learn how to increase their yields of crops, milk, and eggs, and the produce from the demonstration farm was distributed to our most needy patients. The farm serves as a focal point for the community and a gathering place where persons living positively with HIV/AIDS can engage with the greater community. The farm also gives the community more ownership in the response to the HIV epidemic. For these reasons, the farm had an unintended benefit of slashing HIV stigma in the community.

Over time, as AMPATH expanded to other sites, the HAART and Harvest Initiative evolved into four high-tech, high-production farms plus three demonstration farms. These farms currently produce more than five tons of fresh produce weekly, all of which is

distributed to our hungriest patients and their families. The United Nations World Food Program complements the fresh produce from our farms with donations of corn, beans, corn/soy blend, and oil. AMPATH now provides food assistance to up to 30,000 people per week. Food distribution, however, is a formidable challenge. The daily measure of supply and demand must be translated into individual patient allocations, which are to be picked up at specific distribution sites spread over western Kenya. Industrial engineers from Purdue University have joined with AMPATH to create the proper computerized nutrition information system capable of getting the right food to the right place at the right time. In addition, this component of the AMPATH food program is complex, requiring trucks, storage warehouses, distribution centers, distribution workers, and data clerks.

Income security

We discovered that many patients had lost their jobs due to the physical limitations of their illness or because of the stigma associated with being HIV positive. The majority of our initial patients had been widowed by the disease and did not have the skills or capital necessary to support their families. Enabling these patients to earn a sustainable source of income to achieve well-being and sustain or restore human dignity was nearly as important as providing food assistance. In response to this need, the Indiana–Moi partnership created the Family Preservation Initiative. Up and running at four of AMPATH's 19 sites and currently expanding to three more sites, the Family Preservation Initiative aims to address patients' economic security needs through skills training, microcredit, agribusiness support, a fair-trade-certified crafts workshop and agricultural cooperatives.

Information system

The complicated and lifelong nature of HIV/AIDS care, monitoring patient adherence to antiretroviral therapy, and the need for reliable research demands accurate and detailed record keeping, a significant barrier to sustainable care in the developing world.⁴⁹ Before the founding of AMPATH, Indiana and Moi had already created the first-ever electronic medical records system in sub-Saharan Africa.⁴ Now, in collaboration

with Partners in Health, an organization that provides comprehensive health care to underserved communities throughout the world, this system has evolved into a shareware electronic medical record system called OpenMRS, a common framework on which medical informatics efforts in developing countries can be built. OpenMRS is already being used by AMPATH, in HIV/AIDS clinics in Rwanda, and in a hospital in South Africa.⁵⁰

Clinics, classrooms, labs

In many of our sites, as the number of patients treated increased beyond hundreds to thousands, we found that the necessary amount of care could not be provided in existing facilities alone. So, the partnership built a number of additional facilities, including the AMPATH Centre of Excellence for HIV Care, Kenya's first facility solely dedicated to caring for HIV-positive patients. At this 80,000-square-foot facility in Eldoret, patient care is provided and medical school faculty, clinical officers, and nursing staff are trained in providing comprehensive multidisciplinary care to HIV-infected patients. The center also serves as a home for multiple research projects, a tuberculosis diagnostic laboratory, and an HIV reference laboratory.

Transparency and accountability

One of the most critical challenges we faced with AMPATH was to develop the administrative capacity to support an increase in staff numbers and to assure fiscal accountability in a time of rapidly increasing budgets. We did this by creating a research and sponsored programs office administered jointly by Moi Teaching and Referral Hospital and Moi University, housed in the AMPATH Centre. Administrators from IUSM's research and sponsored program's office played a key role in this process. Philanthropic support coupled with in-kind support from Indiana University enabled bilateral exchange and the eventual success of this endeavor.

Although many challenges remain in front of us, the partnership's efforts to confront the HIV/AIDS pandemic have been successful. AMPATH is Kenya's largest public sector HIV/AIDS program and has been designated by the ministry of health as the training site for providers

in western Kenya. Treatment of AMPATH's patients has been shown to result in significant and persistent clinical and immunological benefit, with patients showing both weight and CD4 cell count increases well into the third year of follow-up.⁴⁴

After IUSM, Moi Teaching and Referral Hospital, and Moi University articulated a shared vision and commitment to address the HIV/AIDS crisis in Kenya, funding followed. AMPATH has been supported by grants from the United States Agency for International Development, the President's Emergency Plan for HIV/AIDS Relief, the U.S. Centers for Disease Control and Prevention, the Maternal to Child Transmission Plus Initiative, the Bill and Melinda Gates Foundation, private family foundations in Canada and the United States, and other private philanthropy. Importantly, since the inception of the Indiana–Moi partnership, in-kind support from Indiana University, private philanthropic support (including from the interfaith community), and a willingness to take calculated risks have been keys to the success of the partnership. We cannot overstate the vital role that private philanthropy has played in enabling the partnership to respond nimbly and effectively to problems at hand.

Institution Building and Risk-Taking in Kenya

Beyond the parameters of the HIV/AIDS response, the long-term commitment of the Indiana–Moi partnership has inspired a focus on sustaining the emerging health system in Kenya. Through Moi's, IUSM's and Moi Teaching and Referral Hospital's access to a broad array of funding sources, the partnership enhances financial security and provides sustained support for Kenyan faculty members. IUSM has coordinated a program for United States-sponsored tuition scholarships and work–study opportunities for Moi University students. This support, along with support for programmatic and faculty development in multiple disciplines, works to increase the capacity of Kenya to address its own health needs while also combating the disturbing phenomenon of “brain drain” in Kenya and other developing countries.⁵¹

It is important to note the essential role that multiinstitutional cooperation within Kenya played in creating and sustaining the partnership. Ministries of health and education in developing countries are routinely called on to respond to health crises, but too often, the ministries are not encouraged or empowered to combine forces and take advantage of their complementary resources. In our case, Moi University School of Medicine, under the banner of the Kenyan Ministry of Education, and Moi Teaching and Referral Hospital, part of the Kenyan Ministry of Health, accepted the risks of a partnership with each other and with IUSM. These risks included the possibility of a failed program, loss of prestige that comes with shared leadership, and diverting funds from other pressing needs. Of course, IUSM also accepted its own risks of lost resources and prestige. At its inception, the institutional partnership among IUSM, Moi University School of Medicine, and Moi Teaching and Referral Hospital resulted from personal, departmental, and institutional commitments and agreements. We did not begin at the level of the ministries and work down; rather, we effected relationships at personal, departmental and institutional levels and then involved the greater universities, ministries, and central governments.

Many institutions in North America and sub-Saharan Africa have not been willing to accept the risk of partnership in pursuing ambitious public health goals. But, in our case, key faculty members of both schools of medicine altered their time commitments to accept the partnership challenge, and the institutions made priority adjustments as well. All involved agree it is unlikely that the extensive cross-ministry cooperation within Kenya would have occurred without the catalytic role of IUSM, which was able to approach the health crisis from a broad and “neutral” perspective removed from, but not insensitive to, internal Kenyan political interests.

The Power of an Academic Medical Partnership

Although limited research has been conducted on best practice approaches to building health care systems in the developing world,⁵² the Indiana–Moi experience provides a model for

institutional partnerships meeting the challenge of providing health care in a resource-poor environment. AMPATH's success lies in its ability to achieve a rapid increase in required services and resources to meet the treatment needs of tens of thousands of HIV patients at multiple clinical sites, to combine care at rural and urban settings, and to provide a comprehensive system of care in an environment that hosts training and research. These capacities are directly attributable to the substantial resources created by the academic medical partnership between Moi and IUSM.

The current crisis facing sub-Saharan Africa demands a response from every available resource within Africa, joined with meaningful contributions from the full spectrum of resources available to developed countries. For African AMCs, this means discovering the dormant power that resides in the tripartite mission of patient and community service, teaching, and research. For U.S. AMCs, it means risking far more than collaboration in fully funded research and training ventures, and instead engaging in a committed and equitable relationship with their developing world counterparts.

It was an accident of epidemiology that caused our Indiana–Moi partnership to be confronted by the greatest pandemic of our time, but it is no accident that an academic medical partnership has been able to respond to the crisis quickly, comprehensively, and effectively. We call on other AMCs in North America and Africa, and the funders that support them, to discover their own potential for a similarly meaningful response.

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Dr. Einterz is associate dean for international programs and professor of clinical medicine, Indiana University School of Medicine, Indianapolis, Indiana.

Dr. Kimaiyo is program manager for the academic model for the prevention and treatment of HIV/AIDS and senior lecturer, Moi University, Eldoret, Kenya.

Prof. Mengech is director, Moi Teaching and Referral Hospital, and professor of psychiatry, Moi University, Eldoret, Kenya.

Prof. Khwa-Otsyula is former dean, School of Medicine, and associate professor of surgery, Moi University, Eldoret, Kenya.

Prof. Esamai is dean, School of Medicine, and professor of child health and paediatrics, Moi University, Eldoret, Kenya.

Mr. Quigley is director of operations and development for the IU–Kenya partnership, and adjunct professor of law, Indiana University School of Law, Indianapolis, Indiana.

Dr. Mamlin is professor of medicine, Indiana University School of Medicine, Indianapolis, Indiana, and visiting professor of medicine, Moi University, Eldoret, Kenya.

References

- Hale HA. Caring for the Community: The History of Wishard Hospital. Indianapolis, Ind: Wishard Memorial Foundation; 1999.
- Einterz RM, Kelley CR, Mamlin JJ, van Reken DE. Partnerships in international health. The Indiana University–Moi University experience. *Infect Dis Clin North Am.* 1995;9:453–455.
- Rotich JK, Hannan TJ, Smith FE, et al. Installing and implementing a computer-based patient record system in sub-Saharan Africa: the Mosoriot medical record system. *J Am Med Inform Assoc.* 2003;10:293–303.
- Hannan TJ, Rotich J, Odero WWO, et al. The Mosoriot medical record system: design and initial implementation of an outpatient electronic record system in rural Kenya. *Int J Med Inform.* 2000;60:21–28.
- Hannan TJ, Tierney WM, Rotich JK, et al. The Mosoriot medical record system (MMRS) phase I to phase II implementation: an outpatient computer-based medical record system in rural Kenya. *Medinfo.* 2001;10:619–622.
- Tierney WM, Rotich JK, Smith FE, Bii J, Einterz RM, Hannan TJ. Crossing the “digital divide:” implementing an electronic medical record system in a rural Kenyan health center to support clinical care and research. *Proc AMIA Symp.* 2002:792–795.
- Hannan TJ, Tierney WM, Rotich JK, et al. Technological and human factors affecting the utilization of a CBPR system in western Kenya. *Medinfo.* 2004:1627.
- Odero WW, Einterz RM, Mungai S, Tierney WM. Using an electronic medical record system to describe injury epidemiology and health care utilization at an inner-city hospital in Indiana. *Inj Control Saf Promot.* 2005;11:269–279.
- Siika AM, Rotich JK, Simiyu CJ, et al. An electronic medical record system for ambulatory care of HIV-infected patients in Kenya. *Int J Med Inform.* 2005;74:345–355.
- Mamlin BW, Biondich PG. AMPATH medical record system (AMRS): collaborating toward an EMR for developing countries. *AMIA Annu Symp Proc.* 2005;490–494.
- Diero L, Rotich JK, Bii J, et al. A computer-based medical record system and personal digital assistants to assess and follow patients with respiratory tract infections visiting a rural Kenyan health centre. *BMC Med Inform Decis Mak.* 2006;6:21.
- Nyarang’o PM. Kenya’s innovation in medical education. *SGIM News.* 1990;13:4–5.
- Ayuku DO, Einterz RM, Esamai F, et al. Interviewing: A Manual on Interviewing for Health Professionals. Eldoret, Kenya: Moi University Faculty of Health Sciences; 1991.
- Odero WWO. Community-oriented medical education: a strategy for implementing primary health care in Kenya. *SGIM News.* 1991;4:5.
- Mamlin J. Academic general internal medicine in the developing world: a personal perspective. *SGIM News.* 1993;14:1,3–4.
- Bettinger P, Takesue B. A resident’s perspective of a hospital rotation in Kenya. *SGIM News.* 1993;16:2,7.
- Dean RA, Ochieng W, Black J, Queener SF, Bartlett MS, Dumaual NG. Simultaneous determination of primaquine and carboxyprimaquine in plasma using high-performance liquid chromatography with electrochemical detection. *J Chromatogr B Biomed Appl.* 1994;655:89–96.
- King NW, Ndiema M, Neff AW. Anterior structural defects by misexpression of Xgbx-Z in early *Xenopus* embryos are associated with altered expression of cell adhesion molecules. *Dev Dyn.* 1998;212:563–579.
- Maritim AC, Moore BH, Sanders RA, Watkins JB III. Effects of melatonin on oxidative stress in streptozotocin-induced diabetic rats. *Int J Toxicol.* 1999;18:161–166.
- Strother RM, Thomas TG, Otsyula M, Sanders RA, Watkins JB. Characterization of oxidative stress in various tissues of diabetic and galactose-fed rats. *Int J Exp Diabetes Res.* 2001;2:211–216.
- Maritim AC, Dene BA, Sanders RA, Watkins JB. Effects of β -carotene on oxidative stress in normal and diabetic rats. *J Biochem Mol Toxicol.* 2002;16:203–208.
- Maritim AC, Sanders RA, Watkins JB. Effects of alpha-d-lipoic acid on biomarkers of oxidative stress in streptozotocin-induced diabetic rats. *J Nutr Biochem.* 2003;14:288–294.
- Maritim AC, Sanders RA, Watkins JB. Effects of pycnogenol treatment on oxidative stress in streptozotocin-induced diabetic rats. *J Biochem Mol Toxicol.* 2003;17:193–199.
- Maritim AC, Sanders RA, Watkins JB. Oxidative stress, antioxidants and diabetes: a review. *J Biochem Mol Toxicol.* 2003;17:24–38.
- Otsyula M, King MS, Ketcham TG, Sanders RA, Watkins JB III. Oxidative stress in rats after 60 days of hypergalactosemia or hyperglycemia. *Int J Toxicol.* 2003;22:423–427.
- Einterz RM, Goss JR, Kelley S, Lore W. Illness and efficiency of health services delivery in a district hospital. *East Afr Med J.* 1992;69:248–253.
- Menge I, Esamai F, Van Reken D, Anabwani G. Paediatric morbidity and mortality at the Eldoret District Hospital, Kenya. *East Afr Med J.* 1995;72:165–169.
- Wools K, Menya D, Mulli F, Jones R, Heilman D. Perception of risk, sexual behaviors, and STD/HIV prevalence in women attending an urban and a rural health centre in western Kenya. *East Afr Med J.* 1998;75:679–683.
- Ayaya SO, Esamai FO, Rotich J, Sidle J. Perinatal morbidity at the Moi Teaching and Referral Hospital, Eldoret East Afr Med J. 2001;78:544–549.
- Maritim AC, Kamar KK, Ngindu A, Akoru CN, Diero L, Sidle J. Safranin staining of *Cyclospora cayetanensis* oocysts not requiring microwave heating. *Br J Biomed Sci.* 2002;59:114.
- Ngindu A, Kamar K, Choge A, et al. Survey of faecal parasites in patients from western Kenya. *J Egypt Soc Parasitol.* 2002;32:1–7.
- Jablonski-Cohen MS, Kosgei RJ, Reimoi AJ, Mamlin JJ. The emerging problem of coronary heart disease in Kenya. *East Afr Med J.* 2003;80:293–297.
- Diero L, Stiffler T, Einterz RM, Tierney WM. Predictors of *Pneumocystis carinii* pneumonia in HIV infected patients. *Int J Med Inform.* 2004;73:743–750.
- Dabis F, Balestre E, Braitstein P, et al. Cohort Profile: Antiretroviral Therapy in Lower Income Countries (ART-LINC): international collaboration of treatment cohorts. *Int J Epidemiol.* 2005;34:979–986.
- Shaffer D, Yebei V, Kimaiyo S, et al. Equitable treatment for HIV/AIDS clinical trial participants: a focus group study of patients, clinician–researchers, and administrators in western Kenya. *J Med Ethics.* 2005;32:55–60.
- The Antiretroviral Therapy in Lower Income Countries (ART-LINC) Collaboration; ART Cohort Collaboration (ART-CC) groups. Mortality of HIV-1-infected patients in the first year of antiretroviral therapy: comparison between low-income and high-income countries. *Lancet.* 2006;367:817–824.
- Moy E, Valente E Jr, Levin RJ, Griner PF. Academic medical centres and the care of underserved populations. *Acad Med.* 1996;71:1370–1377.
- World Health Organization. The Role of Hospitals in Primary Health Care: Karachi Conference Report. Geneva, Switzerland: World Health Organization; 1981.
- Ulmer DD. Some international efforts of medical schools to improve health systems. *Infect Dis Clin North Am.* 1995;9:425–431.
- Institute of Medicine. Healers Abroad: Americans Responding to the Human Resource Crisis in HIV/AIDS. Washington, DC: The National Academies Press; 2005.
- Bosch X. Europe and Africa forge new alliance against poverty-related disease. *Lancet.* 2002;359:1588.

- 42 UNAIDS. 2006 Report on the Global HIV/AIDS Epidemic. Geneva, Switzerland: World Health Organization; 2006.
- 43 Stringer JSA, Zulu I, Sinkala M, et al. Rapid scale-up of antiretroviral therapy at primary care sites in Zambia: feasibility and early outcomes. *JAMA*. 2006;296:782–793.
- 44 Wools-Kaloustian K, Kimaiyo S, Diero L, et al. Viability and effectiveness of large-scale HIV treatment initiatives in sub-Saharan Africa: experience from western Kenya. *AIDS*. 2006;20:41–48.
- 45 High Level Forum on the Health Millennium Development Goals. Addressing Africa's Health Workforce Crisis: An Avenue for Action. Abuja, Nigeria: World Bank and World Health Organization; 2004.
- 46 Mamlin JJ, Kimaiyo S, Nyandiko W, Tierney WM, Einterz RM, eds. Academic institutions linking access to treatment and prevention: case study. In: *Perspectives and Practice in Antiretroviral Treatment*. Geneva, Switzerland: World Health Organization; 2004.
- 47 Tobias R. Testimony to U.S. Senate Foreign Relations Committee; March 7, 2006. Available at: (<http://www.usaid.gov/press/speeches/2006/ty060307.html>). Accessed April 26, 2007.
- 48 Voelker R. Conquering HIV and stigma in Kenya. *JAMA*. 2004;292:157–159.
- 49 Godlee F, Pakenham-Walsh N, Ncayiyana D, Cohen B, Packer A. Can we achieve health information for all by 2015? *Lancet*. 2004;364:295–300.
- 50 Biondich PG, Mamlin BW, Hannan T, Tierney WM. A call for collaboration: building an EMR for developing countries. *AMIA Annu Symp Proc*. 2005:894. OpenMRS available at: (<http://openmrs.org>). Accessed April 26, 2007.
- 51 Physicians for Human Rights. *An Action to Prevent Brain Drain: Building Equitable Health Systems in Africa*. Boston, Mass: Physicians for Human Rights; 2004.
- 52 Mexico, 2004: global health needs a new research agenda. *Lancet*. 2004;364:1555–1556.

Did You Know?

With federal funding from the National Institutes of Health, researchers at Tulane University School of Medicine, in 2004, identified a cell that prevents the immune system from destroying cancer cells in the body.

For other important milestones in medical knowledge and practice credited to academic medical centers, visit the "Discoveries and Innovations in Patient Care and Research Database" at (www.aamc.org/innovations).

POPULATIONS AT RISK

AMPATH: Living Proof that No One Has to Die from HIV

Thomas S. Inui, ScM, MD^{1,2}, Winston M. Nyandiko, MD³, Sylvester N. Kimaiyo, MD³,
Richard M. Frankel, PhD^{2,4}, Tadeo Muriuki, BA⁵, Joseph J. Mamlin, MD², Robert M. Einterz, MD²,
and John E. Sidle, MD, MS²

¹Regenstrief Institute, Indianapolis, IN, USA ²Indiana University School of Medicine, Indianapolis, IN, USA ³Moi University School of Medicine, Eldoret, Kenya ⁴Richard L. Roudebush VAMC, Indianapolis, IN, USA ⁵AMPATH, Eldoret, Kenya.

BACKGROUND AND OBJECTIVE: The HIV/AIDS epidemic in sub-Saharan Africa is decimating populations, deteriorating economies, deepening poverty, and destabilizing traditional social orders. The advent of the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) made significant supplemental resources available to sub-Saharan national programs for the prevention and treatment of HIV/AIDS, but few programs have demonstrated the capacity to use these resources to increase rapidly in size. In this context, AMPATH, a collaboration of Indiana University School of Medicine, the Moi University School of Medicine, and the Moi Teaching and Referral Hospital in Eldoret, Kenya, is a stunning exception. This report summarizes findings from an assessment of AMPATH staff perceptions of how and why this has happened.

PARTICIPANTS AND APPROACH: Semistructured, in-depth, individual interviews of 26 AMPATH workers were conducted and recorded. Field notes from these interviews were generated by independent reviewers and subjected to close-reading qualitative analysis for themes.

RESULTS: The themes identified were as follows: creating effectively, connecting with others, making a difference, serving those in great need, providing comprehensive care to restore healthy lives, and growing as a person and a professional.

CONCLUSION: Inspired personnel are among the critical assets of an effective program. Among the reasons for success of this HIV/AIDS program are a set of work values and motivations that would be helpful in any setting, but perhaps nowhere more critical than in the grueling work of making a complex program work spectacularly well in the challenging setting of a resource-poor country. Sometimes, even in the face of long odds, the human spirit prevails.

KEY WORDS: HIV/AIDS; program evaluation; primary care.

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Patients give and get hope

I live in the village that my clinic serves and know many of the people who come to the clinic. When they first come they are weak and often think they are in a hopeless situation. Watching them get first medicines, then get food for themselves and their families, gain strength, and become themselves again is inspiring and gives me hope that *no one has to die* of HIV. [Clinical Officer]

For the past decade, HIV/AIDS has been decimating populations in sub-Saharan Africa while virtually all attempts to control the pandemic have failed. With the advent of highly active antiretroviral therapy in the mid-1990s, the number of deaths from HIV in the United States began to fall precipitously, but in sub-Saharan Africa the morbidity and mortality from HIV continued virtually unabated.¹ In some parts of Africa, the prevalence of HIV in populations of economically productive adults is nearing 30%, antenatal clinics swell with HIV-infected women oblivious to their HIV status, and the ranks of orphans increase at a frightening rate as parents die without access to treatment.² The international community has mobilized billions of dollars to help Africa respond to its HIV/AIDS problem,³ but there are limited examples of large-scale success.⁴

The purpose of this report is to describe staff work dynamics in a system of HIV/AIDS care that has arisen in response to the daunting set of sub-Saharan HIV challenges, made its services accessible to an estimated population of two million persons in western Kenya, and demonstrated an exceptional record of successful program decentralization and growth in enrollment. This system, called AMPATH, the Academic Model for the Prevention and Treatment of HIV/AIDS, was founded in 2001 with private philanthropic support and has subsequently developed into one of the highest-performing HIV/AIDS control systems in sub-Saharan Africa.

ORGANIZATION OF AMPATH

The history, organizational structure, and health programs of AMPATH have been described in a recent publication.⁵ AMPATH emphasizes regional Kenyan leadership and a diverse consortium of providers.^{6,7} Founded upon a 17-year collaboration between Indiana University School of Medicine and Moi University in Kenya, AMPATH *leads with care* but leverages and hosts activities of all academic missions—clinical care, teaching, and research. The directors of AMPATH are the

Director of Moi Teaching and Referral Hospital and the Dean of Moi University Faculty of Health Sciences. One General Internist from Indiana University (JM) has served on-site in Kenya as coordinator of AMPATH clinical activities since the program's inception.

AMPATH operates HIV/AIDS care clinics and screening programs in the city of Eldoret at Moi Teaching and Referral Hospital (Kenya's second national referral hospital) and in a network of 18 other district hospitals and rural health clinics. Currently, it delivers care to more than 52,000 patients (of the estimated 200,000 HIV-infected persons in its service area), has nearly half of these patients on antiretroviral therapy (ART), and is enrolling more than 2,000 new patients per month. AMPATH mainly employs teams of Kenyan clinical officers (akin to physicians' assistants in the U.S.), nurses, and nutritionists who work within facilities owned and operated by the Kenya Ministry of Health. These teams are formally supervised by medical doctors, but the bulk of the antiretroviral therapy is prescribed and monitored by clinical officers using standardized clinical algorithms.⁸

Experienced observers of global HIV programs, including leadership in USAID, Kenyan Ministry of Health, WHO, and major philanthropies⁹ consider AMPATH's record of enrollment growth in response to population need to be "best in class" among PEPFAR and other programs. In addition to remarkable growth, AMPATH's patient retention, adherence, and restoration of immune competence among patients meeting criteria for ART have also been favorable.¹⁰ Interest in understanding the determinants of this success moved the principals of the Purpleville Foundation (PVF), a Canadian private family foundation with a record of commitments to global health, to request and sponsor an evaluation.

AMPATH EVALUATION—A FIRST STEP

In January 2006, work was initiated for the larger AMPATH evaluation. The initial qualitative field work was focused on staff dynamics that supported the program's robust performance. How the program had been able to perform at such a high level and, in particular, what has permitted this performance to be sustained in a social environment often marked by organizational failure (and even corruption) was not self-evident. In effect, the qualitative evaluation sought to answer the question, "What makes AMPATH tick?"

METHODS

In January of 2006, one of the authors (TI) conducted 26 semistructured interviews with consenting AMPATH program personnel and closely related others. The general form of the interview was derived from the organizational development method of "appreciative inquiry" (AI).^{11,12} AI is an organizational development method that employs interviewing and storytelling to draw out the best of an organization's past experience. It is a process designed to:

- facilitate the discovery of factors that give life to an organization;
- change the nature of conversations in an organization;
- stimulate the emergence of an organization's collective "future vision"; and
- set the stage for future action.

The assumptions of AI are two: (1) *something is working well* for every person or group in an organization and (2) looking at what works well and doing more of it is more motivating and energizing than looking for what does not work and trying to fix it. In this setting, AI interview approaches that have been widely used in industry and academe were adapted to serve as the basis for exploring AMPATH performance from the diverse perspectives of a sample of AMPATH personnel. The actual interview protocol, in outline form, is available from the authors. This study's activities were approved by the Moi IREC (Moi University's NIH-approved Institutional Review Board [IRB]) and Indiana University's IRB.

AMPATH personnel interviewees were drawn from a strategic sample of personnel, including: occupants of leadership, administrative, and line positions. No person declined to be interviewed, although certain program personnel were in the field and unavailable during the interview period. Interviews were conducted at 3 program sites over a period of 2 weeks. All interviews were audiotaped and extensive field notes were taken. Interviews were approximately 60 minutes in length (ranging from 50 minutes to 85 minutes) and were conducted in office settings. Audiotapes of 2 interviews were technically flawed—one because of background noise and the second because the digital recorder exhausted available memory in midinterview.

The procedures followed by the analysis team are well-accepted qualitative research methods in the tradition of crystallization/immersion described by Crabtree and Miller.¹³ The recorded interviews and field notes were reviewed for "themes" within and across question responses by Inui. Twenty of the interview recordings were also reviewed by at least 1 other individual from the analyst group that included John Sidle, Richard Frankel, and Tadeo Muriuki. Each of these reviewers listened to the recording of the interview and independently recorded "field notes" for comparison with Inui's original notes. These independent analysts also extracted and compared themes. Themes independently identified from paired field notes revealed an extraordinarily high degree of concurrence between reviewers. Of all themes identified by either reviewer in an analyst pair, 90.1% were identified by both members. These themes are listed in the accompanying table, grouped by analyst consensus into 6 domains, shown as headers within the table. After consensus themes were codified, narratives from the interviews were identified as illustrative of the themes. Condensed versions of these stories were developed (to shorten them and preserve appropriate degrees of confidentiality) and were reviewed by the analysts to ensure that the meaning and natural language of each story were preserved. The condensed stories are presented to illuminate the themes.

CREATING EFFECTIVELY

Putting patients first

From the beginning we have tried to put patient priorities and patient treatment activities first in order of importance. Unless we succeeded with patients, nothing else we might say would convince anybody to trust us. When we did succeed with patients, many were astonished and wanted to help. [Physician]

Working between organizations

It has been helpful for AMPATH to work “between organizations” like the School of Medicine and the Moi Teaching and Referral Hospital. When one organization’s policy is a barrier, the other can sometimes create a more flexible environment. In the space between organizations nobody is really “in charge” and the program can make progress rapidly. [Hospital Director]

Providing transportation

In the beginning there was one driver, one car, many trips, and many people to transport. Although the work days were long, we somehow made it work. Now there are twenty cars and twenty drivers, twelve sites, a very large number of daily trips, and even more personnel than I could have imagined. Somehow we still make it work. You learn how to recognize other peoples’ strengths and to rely upon them. [Driver]

A number of personnel believe that having an opportunity to be innovative and creative in their work is highly effective in growing and improving the operational efficiency of the program. More than that, seeing such innovation be successful and sustainable is inspiring. Virtually all AMPATH employees said something about the importance of participating in “something that really works,” whatever risks and personal investment are required. In the beginning it was not clear that taking care of patients with AIDS would be beneficial at all. Seeing these individuals improve and participating in growing the program that helps them is thrilling for AMPATH personnel. Indeed, 1 interviewee expressed the opinion that—in some deeply ironic way—“HIV might be good for Kenya.” In a society with so much chaos, she ventured, where it is so very difficult for anything to really work, seeing an HIV program begin and succeed is “an important lesson for us all.”

CONNECTING WITH OTHERS—THE AMPATH TEAM, PATIENTS, AND OTHERS

Teamwork pays off

In a village one morning I was surprised to see that colleagues from several *different* AMPATH programs had, apparently by chance, all arrived there on the same day to pursue their different activities. For my part, I was to explain to people in the village a new form of nutrition—a powder that didn’t look like food at all. Because we had all come together, an impromptu large village gathering formed around us and gave us a chance to work together as a team. It was exciting and got the message to the people about why the different parts of the AMPATH program are each important and how we work as a team. [Nutritionist, Program Leader]

Leaving my wife in labor

This work is demanding and requires total commitment. The day came when I was supposed to go to work in clinic, but my wife was at home in labor with our second child. I was uncertain what to do. She was healthy, and I thought she would have a successful labor. My patients in clinic were often severely ill and needed me to be

there, so I left her at home and went to the clinic. Twenty minutes into the clinic work there was a knock at the office door and Joe Mamlin was there, saying “Go home to your wife!” I did, and we successfully delivered the new baby—a boy named Joe Mamlin. [Clinical Officer]

Avoiding a crisis

When I came back from my maternity leave, I was proud that the pharmacy was working beautifully—my colleagues had successfully taken over my duties in my absence. When I reviewed the supply of medicines in the store room, however, I was stunned to realize that we were going to run out of medicine for our patients in about six weeks! I could not rapidly increase our supply from abroad because orders for new medicines often take a long time to be filled. I called a number of pharmacists I knew in HIV/AIDS programs in Kenya, asking whether they could loan me a small supply of antiretroviral drugs for a short period of time. Every single one of them helped, and with a little bit from here and there we made it through without putting any patient at risk. When my big supply came in I repaid the other pharmacists. Pulling together, acting in trust and faith, we avoided the crisis. [Pharmacy Director]

Everyone among the AMPATH interviewees emphasized the importance of strong relationships with one another and with patients and their families. Watching patients recover gives hope to all. Seeing the extraordinary commitment of the programs’ founders—perhaps notably the IUSM anchor physician Joe Mamlin’s example—has been an inspiration, but the stories of how various AMPATH personnel work together as a team, recognize and celebrate their interdependence and teamwork also abound.

MAKING A DIFFERENCE

Coming back

One of the most challenging patients I’ve ever cared for was pregnant, HIV positive, and developed head and neck cancer. When I first saw her in clinic I thought she would die before we could get her to the hospital. Putting her in the car, we drove to the hospital, delivered a healthy baby after spontaneous labor, started her on chemotherapy, and—once regression of her tumor permitted swallowing—started her on ARV’s, I thought she had truly come back from the dead. She remains tumor-free to today. I love seeing her and her healthy child in clinic. [Physician]

Presenting at a national conference

I was pleased, but somewhat surprised, to be asked to represent the AMPATH program at a gathering of the national leadership and officials in the Ministry of Health in Nairobi. It was in the early days of AMPATH and I did not consider myself to be a major figure or leading expert in the care of patients with HIV. I presented the approach we had developed at AMPATH, describing what we were doing as a doctor might—using cases—and was gratified to see how excited others became at our success. I think it was understood that

we were truly pioneers and had found a way forward that worked. Now we are regularly consulted on policy and program approaches. We are known for making something work. [Physician]

Reports of seeing people who “come back from the dead” are strong part of the narrative fabric of AMPATH. Beyond this “medical miracle” there is the sense that the emergence of AMPATH as a successful program has been a “pathfinder” development for the institutions involved in its founding, including Moi University School of Medicine, Moi Teaching and Referral Hospital, and Indiana University School of Medicine (as well as Brown University and other institutions from the northern hemisphere involved in AMPATH activities). Many feel that by its operation and success, the program is making a contribution to national and international policy as well as to the health of vulnerable populations.

SERVING THOSE IN GREAT NEED

Advocating for a patient

In the early days of AMPATH treatment, we had too few antiretroviral drugs to treat the many patients who actually needed them. I was working in the clinic every day and noticed one woman who came back and back begging for medicines, asking whether just a few pills might be available for her. Finally the day came in which we had a treatment slot for one more patient. I described this woman, her many visits to the clinic, and how I was sure she would completely adhere to all our requirements if she were given a chance to take the ARVs. When the team decided that she could now be treated, she could not stop crying—from happiness and relief. She is one of our best patients and takes wonderful care of her family. [Nurse]

Magic

I work in a number of locations that others in AMPATH may not see. Because I hear who is sick, hiding, and not coming at all to our clinics, I sometimes visit them in their homes to help them decide to get care. Some of them think there is no recovery from HIV. Others don't want neighbors or other people in the village to know they are sick. Slowly, we are making progress even with these hard-to-reach patients and their neighbors. When I finally talked one man out of his house and, after treatment, he was restored to total health, his neighbor said to me, “What do you people do over there—magic?” [Director, Outreach Service]

The philosophic foundations of the program are easily identified in the interviews. Program personnel, from top to bottom, feel “called” by a service ideology. They particularly recognize the need to respond to the most vulnerable populations, including the sickest and poorest individuals in western Kenya, children, orphans, widows, and others. There is an explicit, shared belief in the need to put these individuals and their care first among all priorities.

PROVIDING COMPREHENSIVE CARE TO RESTORE HEALTHY LIVES

Getting tested

I saw a patient in clinic with abdominal pain and had to transport her to a hospital on an emergency basis in my car. She turned out to have a pelvic inflammatory disease and almost died from this, but she also had HIV when she was tested. When she recovered she brought her daughters to clinic for testing and more recently has brought other women to the clinic to be certain they are checked for HIV. I think she wants all women in the village to stay healthy. [Clinical Officer]

How far can he go?

I took care of a patient in our clinic whom I saw for a long time before he was eligible to start on antiretroviral drugs. Once he began to take the medicines, he regained his health and didn't need to come in to the clinic as often, or to see me when he came. One day, when he was in clinic, he saw me and said, “Now I am too well for you to talk to me anymore, but do I have to be sick for you to say hello?” I felt sad about this and when it occurred to me that I needed help at home on my farm I asked him to come and do this work. Now he lives on my farm and looks after the animals. He is almost becoming a member of my family. He has come a long way, but I am interested to see how far he can go! [Clinical Officer]

AMPATH workers are proud of treating the whole person and attending to nutritional and income security as well as medical care. They are acutely aware that PEPFAR support for drugs will end and that patients must be ready to be self-supporting. They recognize the importance of this matter and are eager to work on prevention, behavior change, and employment as well as medical care.

GROWING AS A PERSON AND AS A PROFESSIONAL

Having the confidence of others

When we first started to do research, it was decided that a special office was important to provide standard administrative procedures and support services for research. I had some relevant experience, but not a great deal of it. When I sat with the two senior directors they asked, “Are you ready to take this challenge?” I was, and it felt good to have their confidence from the beginning. [Administrator]

Personal and professional growth is a significant part of work motivation and satisfaction among AMPATH workers. They have created a community of trust and teamwork, within which each person's new skills, knowledge, and capacities serve everyone else. At every turn, they are eager to get and give training. The program environment supports this use of expertise, new and old, to the fullest, and provides resources for training and innovation.

DISCUSSION

This study has limitations that are important to cite. It was undertaken because AMPATH is a remarkable case which, if explored, might have heuristic value for other programs. Like all case reports it has unknown generalizability. Although we used our best efforts to triangulate data, all qualitative methods are subject to “observer bias.” The study concentrates on worker performance dynamics and isolates these from other determinants of program performance.

There are, of course, many explanations for AMPATH’s success. Some of the most important are the international organizational cooperation that undergirds AMPATH and the program’s systemic approach to HIV prevention and treatment—a holistic, biopsychosocial approach to health care that includes prevention, medical care, nutrition, psychosocial support, and income security. Clearly, the availability of PEPFAR funds and other resources (e.g., volunteered effort, food, land, and institutional infrastructure) have been critical to the capacity of the program to initiate, sustain, and expand its efforts.

Like all high-performing programs, however, AMPATH must operate, grow, and innovate through the efforts of its inspired workers. Rising to the challenge of Kenya’s HIV epidemic requires shared, sustainable staff commitment to a holistic vision of health, the belief that their work will succeed in spite of daunting circumstances, and efficient and effective use of resources, even in the face of daily tribulations. The odds are stacked against any such effort succeeding. Kenya, like many other developing countries suffers not only from the spread and adverse impact of HIV, but from substantial and entrenched health problems attributable to malaria, tuberculosis, malnutrition, poverty, unemployment, social violence, ineffective governance, untrustworthy institutions, ossified bureaucracies, low educational attainment, gender inequities, tribalism, and limited development of transportation infrastructure. The people of Kenya, including the AMPATH workers, *know* all of this.

The AI method does not highlight these negative contexts. As an organizational development and research method, AI focuses instead on “positive” stories because these success narratives show the way forward in spite of many challenges. Whereas they do not “pathologize” organizations, people, or social orders, AI narratives are not naïve. The stories collected for this study could also be read to reveal the program’s challenges. The “Working between organizations” story is remarkable precisely because several bureaucracies did not reduce AMPATH to a “least common denominator” organization, paralyzing it by requiring compliance with all their policies. “Putting patients first” reveals how AMPATH secured *trust*, a critical but scarce resource at the beginning of program operations. “Providing transportation” reveals the lack of basic infrastructure, including daily staff transportation to and from decentralized clinical sites. “Teamwork pays off” documents successful teamwork in spite of the risk for interdisciplinary conflict and chaos. “Patients give and get hope” simultaneously highlights the generally hopeless state of HIV-positive patients before the emergence of an aggressive ART program and how staff are inspired by patients (avoiding burnout). “Avoiding a crisis” documents the resiliency of a

staff network, but also the tenuousness of the drug delivery supply chain. Other challenges visible in the stories include a background of folk beliefs that attribute HIV/AIDS to witchcraft, the risk of unemployment for HIV-positive persons, the need for a larger skilled workforce. AI does not neglect challenges and barriers, instead, it shows how people in effective programs have found ways to overcome them.

Against all these odds, the AMPATH workers know that they have *made something work*—and have done this together. From the highest levels of leadership to the critically important support staff, everyone within the program feels him or herself to be a vital participant in the work of the program, someone without whom AMPATH could not succeed. These individuals are spurred on by the daily experience of making a difference to individuals, their region, their country, and the world. In a highly challenging environment, they have created a trustworthy community of work and action. In an impoverished society, they have found a richness of spirit. Unlike mythical Camelot, AMPATH is a hardworking, sleeves-rolled-up enterprise marked by flexibility, innovation, and quick response to need. It succeeds because it serves. It inspires because it expresses in the daily round of intense AMPATH activities the core aspiration of humankind to help one another, especially the most vulnerable among us, whatever the challenges.

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Corresponding Author: *Thomas S. Inui, ScM, MD; Regenstrief Institute, 1050 Wishard Blvd RG6, Indianapolis, IN 46202, USA (e-mail: tinui@iupui.edu).*

APPENDIX

AMPATH Staff Interview Themes

- “Creating effectively”
 - New challenges, new opportunities
 - Program innovation
 - Being flexible
 - Making something really work
 - Making “long shots” pay off, taking risks
 - Using the advantages of working between organizations instead of within them
 - Sharing credit for our achievements with others (e.g., the Ministry of Health)
 - Investing in training, education, counseling
 - Successful advocacy for patients and program
- “Connecting with others”
 - Networking, liaising with community, including rural locations
 - Forming strong relationships to patients
 - Taking patients into our lives
 - Teamwork, trusting others, relying on others, partnering with other disciplines
 - Seeing other committed people work
 - The force of Joe Mamlin’s example, determination, confidence, success
 - Good, supportive working environment
- “Making a difference”

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Seeing people brought "back from the dead"
 Growing a large program
 Answering national-level questions
 Being supported with what's needed (various resources)
 Responding to big needs
 "Serving those in great need"
 Believing in the potential of humankind
 Serving the most needy, the most vulnerable
 Treating children
 Putting patients and their care first
 "Providing comprehensive care to restore healthy lives"
 Treating the whole person, being patient-centered
 Working on prevention, behavior change
 Fostering hope, recovery, independence
 Providing psychosocial support, nutrition and income security
 "Growing as a person and a professional"
 Finding work
 Being trusted with big responsibilities
 Getting training, new skills
 Having and using relevant expertise to the fullest
 Experiencing pride of accomplishment
 Being collaborative, truthful, totally committed, competent,
 confident, efficient
 Becoming good at working with other people
 Being in a good work environment, supportive and trustworthy
 Being in a transformative community of care

REFERENCES

1. **Sepkowitz KA.** One disease, two epidemics—AIDS at 25. *N Eng J Med* 2006;354(23):2411–4.
2. UNAIDS. 2006 Report on the Global AIDS Epidemic. Geneva: UNAIDS, 2006.
3. World Health Organization. Progress on Global Access to HIV Antiretroviral Therapy: an Update on "3 by 5". World Health Organization, 2005.
4. **Merson MH.** The HIV-AIDS pandemic at 25—The global perspective. *N Eng J Med* 2006;354(23):2414–7.
5. **Einterz RM, Kimaiyo S, Mengech HN, et al.** Responding to the HIV pandemic: the power of an academic medical partnership. *Acad Med* 2007;82(8):812–8.
6. **Volker R.** Conquering HIV and stigma in Kenya. *JAMA* 2004;292:157–9.
7. **Mamlin J, Kimaiyo S, Nyandiko W, Tierney W, Einterz R.** Academic institutions linking access to treatment and prevention: case study. In: *Perspectives and Practice in Antiretroviral Treatment*. Geneva: World Health Organization; 2004.
8. World Health Organization. Integrated Management of Adolescent and Adult Illness: Interim Guidelines for First-Level Facility Health Workers at Health Centre and District Outpatient Clinic. Geneva: World Health Organization; 2004.
9. **Inui TS, Sidle JE, Nyandiko WM.** Interviews of Kenyan and international organization leaders, January–May 2007. AMPATH evaluation internal document transcripts.
10. **Wools-Kaloustian K, Diero L, Kimaiyo S, et al.** Viability and effectiveness of large-scale HIV treatment initiatives in sub-Saharan Africa: experience from western Kenya. *AIDS* 2006;20:41–8.
11. **Watkins JM, Mohr BJ.** *Appreciative Inquiry: Change at the Speed of Imagination*. San Francisco, CA: Jossey-Bass/Pfeiffer; 2001.
12. **Cooperrider DL, Srivasta S.** *Appreciative Inquiry in Organizational Life. Research in Organizational Change and Development*. JAI Press 1987;1:129–69.
13. **Crabtree BF, Miller WL,** editors. *Doing Qualitative Research*. London: Sage; 1992.

Beyond Medical “Missions” to Impact-Driven Short-Term Experiences in Global Health (STEGHs): Ethical Principles to Optimize Community Benefit and Learner Experience

Melissa K. Melby, PhD, MPhil, MA, Lawrence C. Loh, MD, MPH, Jessica Evert, MD, Christopher Prater, MD, Henry Lin, MD, and Omar A. Khan, MD, MHS

Abstract

Increasing demand for global health education in medical training has driven the growth of educational programs predicated on a model of short-term medical service abroad. Almost two-thirds of matriculating medical students expect to participate in a global health experience during medical school, continuing into residency and early careers. Despite positive intent, such short-term experiences in global health (STEGHs) may exacerbate global health inequities and even cause harm. Growing out of the “medical missions” tradition, contemporary participation continues

to evolve. Ethical concerns and other disciplinary approaches, such as public health and anthropology, can be incorporated to increase effectiveness and sustainability, and to shift the culture of STEGHs from focusing on trainees and their home institutions to also considering benefits in host communities and nurturing partnerships. The authors propose four core principles to guide ethical development of educational STEGHs: (1) skills building in cross-cultural effectiveness and cultural humility, (2) bidirectional participatory relationships, (3) local capacity building, and (4) long-term sustainability.

Application of these principles highlights the need for assessment of STEGHs: data collection that allows transparent comparisons, standards of quality, bidirectionality of agreements, defined curricula, and ethics that meet both host and sending countries’ standards and needs. To capture the enormous potential of STEGHs, a paradigm shift in the culture of STEGHs is needed to ensure that these experiences balance training level, personal competencies, medical and cross-cultural ethics, and educational objectives to minimize harm and maximize benefits for all involved.

Growing interest in global health has promoted the expanding phenomenon of short-term experiences in global health (STEGHs). Historically undertaken by licensed professionals, trainees are increasingly involved. Trainee participation in STEGHs can drastically vary in scope, but considered elements include short duration abroad (1–30 days),¹ nature of activities undertaken (e.g., clinical care, education, research, public health efforts),² and philosophy of the facilitating organizations.

Almost two-thirds of matriculating medical students expect to participate in a STEGH during medical school.^{3,4} This has driven a proliferation of programs in the form of alternative spring breaks, service trips, and medical

electives.⁵ STEGH participants often have multiple objectives ranging among education, training, social responsibility, medical service, and/or tourism.⁶ Of note, STEGHs have been shown to provide significant educational gains that are foundational for preparing globally engaged health care workers from higher-income countries (HICs).⁷ Common educational objectives for HIC trainees include exposure to diseases uncommon in HIC settings, increased clinical acumen, development of professional networks, fulfilling a social responsibility, and providing care to the underserved.⁸ However, STEGHs focused solely on clinical service, and participant learning may constrain the broader aim of international development, elimination of health disparities, and public health, particularly if the experiences are not associated with a capacity-building agenda.^{1,9,10}

In the absence of clear definitions, standards, impact data, and appropriate conduct, STEGHs may represent a suboptimal use of time and resources,¹ harm the host community,¹¹ and even perpetuate global health inequities.¹²

Present literature pertaining to STEGHs by practitioners and learners from HICs is primarily descriptive¹ and is limited to case studies, reflections, ethical discussions, and descriptions of curricula. In this Perspective, we propose recommendations for the ethical implementation of STEGHs especially relevant for those involving trainees; however, many concepts are generalizable for all STEGHs. These principles require shifting from a primary focus on trainees’ experience, to preventing harm and effectively addressing the agenda of host communities, who, through this model, become participatory partners. These principles provide an overarching framework for a needed paradigm shift on which practical “how-to” guides can be based.¹³

The “Medical Missions” Tradition and Contemporary Global Health Experiences

Medical missions historically accompanied missionary work and colonization efforts. Dr. David Livingstone, the well-known 19th-century medical missionary, primarily aimed to spread Christianity but also performed obstetrical procedures

Please see the end of this article for information about the authors.

Correspondence should be addressed to Melissa K. Melby, Department of Anthropology, University of Delaware, 46W. Delaware Ave., Newark, DE 19716; telephone: (302) 831-1857; e-mail: mmelby@udel.edu.

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and surgeries.¹⁴ Medical missionary work often garnered local goodwill and allowed proselytizing, thereby facilitating colonial governments' management and exploitation of their territories.¹⁵ Similarly, Dr. Norman Bethune's surgical missions during the Spanish Civil War and World War II in China were inspired by political ideology (i.e., avowal of communism).¹⁶

In turn, travel and colonization gave rise to the field of tropical medicine. In the late 19th century, Albert Dock Hospital established the London School of Hygiene and Tropical Medicine, which provided care for ill travelers returning from abroad.¹⁷ One predecessor of contemporary STEGHs could be the school's first epidemiological research expedition in the Roman Campagna in 1900, which documented that mosquitoes were required for the transmission of malaria.¹⁷

A move beyond faith-based medical missionary traditions began with the secular, population-based approach exemplified by the International Committee for the Red Cross and Red Crescent. Created in 1863, the organization provided care without regard to affiliation and formed the basis for modern humanitarian assistance.¹⁸ *Medecins Sans Frontieres* (Doctors without Borders) follows this model as well.¹⁹

Global health work was transformed in the mid-20th century with the founding of the World Health Organization (WHO), in addition to advances in hygiene and the development of antibiotics and vaccines. Large-scale international development programs were created around these interventions, undertaken by national governments in cooperation with organizations like the WHO, nongovernmental firms, and universities.²⁰ With a shifting focus from patient care to population-based efforts, the role of physicians became less about clinical acumen and more about public health, capacity building, and program administration.

Medical missions gained prominence in the late 1970s and 1980s, owing to the ease of modern air travel and growing awareness of health challenges in low- and middle-income countries (LMICs). By the late 1990s, the advent of the Internet facilitated the growth

and visibility of numerous community groups and nonprofit organizations offering STEGHs, leading to discussions around their educational and ethical considerations.¹³ Modern-day "medical missions" can be either faith based or secular in their underlying ideologies.

STEGH Ethical Principles: Focusing on Community Benefit

Accredited and extracurricular opportunities for STEGH participation have arisen in response to the widespread interest within undergraduate, medical, and postgraduate training programs.³ Many of these STEGHs operate under flawed assumptions that such programs are relatively innocuous and meet specific community needs. However, this is not always true. For example, local partners desiring preventive health promotion activities may not be well served by STEGHs that focus on providing reactive approaches to diseases. Suboptimally conducted STEGHs may also lead to inappropriate volunteer medical care (including unregulated provision of medications, equipment, and surgeries).^{1,21,22} If not integrated with broader plans for health and development, STEGHs can potentially undermine long-term community health outcomes by shifting responsibility from local governments to STEGH providers, which in turn may lead to some patients waiting for subsequent STEGHs to receive care while their conditions worsen.⁵ Likewise, narrow focus on clinical learning objectives for trainees may be a missed opportunity for the development of unique, broad-based, interprofessional global health competencies.²³ Finally, without standardization and guidelines, STEGHs can harm local community health systems and social capital by sidelining local health professionals or working in a disjointed fashion, which may cultivate negative sentiment toward visitors, further limiting impact.

We have identified four principles that highlight key ethical areas in STEGH planning and execution to mitigate harms and optimize benefits for host communities: (1) emphasis on cross-cultural effectiveness skills and cultural humility, (2) bidirectional participatory relationships, (3) local capacity building, and (4) long-term sustainability (see List 1).

Principle 1: Skills building in cross-cultural effectiveness and cultural humility are critical components of successful STEGHs

Health care providers and students receive limited education regarding cultural beliefs and health practices.^{1,24,25} Health professions educators may assume that cultural competency can be taught as a technical skill and focus on "static culture traits."^{26,27} However, anthropologists teach an "explanatory models" approach,²⁶ cultural humility,²⁸ and communication skills that may be more effective when not only cultural but also language, economic, and power differentials exist between local communities and STEGH participants. The Listen, Explain, Acknowledge, Recommend, Negotiate (LEARN) framework²⁹ is a medical anthropology model that has been used successfully in interprofessional training in cultural competency.³⁰ Predeparture training for STEGHs involving role-play and discussion can use cross-cultural effectiveness resources such as the *Worlds Apart* film series.³¹

Without significant understanding and preparation of cultural diversity and cross-cultural communication methods, STEGHs are more likely to cause harm and less likely to contribute meaningfully to learner and community development. Didactic sessions about cultural beliefs and ethnographic techniques can improve learner skills in cross-cultural effectiveness and cultural humility, allowing them to recognize and value local partners' knowledge and advice over preconceptions and hubris.

The underlying principle of any STEGH is that participation is a privilege, not a right. Complementing cultural humility, the principles of humility, nonmaleficence, and professionalism demand that STEGH stakeholders guard against trainees providing suboptimal or inadequately supervised clinical care under the guise of appropriate training opportunities or unsubstantiated community health gains.^{1,32-34} Students and trainees can be allowed to learn, deliver, and participate in clinical care, but only under supervision and with necessary redundancies, such as those that exist in their home training environments. Each trainee's abilities and degree of independence should be

List 1

Summary Guidelines for Implementing Short-Term Experience in Global Health (STEGH) Principles**Principle 1: Skills building in cross-cultural effectiveness and cultural humility are critical components of successful STEGHs**

- Understand that (HIC) health care professions medical education is limited in fully preparing one for work abroad; predeparture training and other extracurricular professional development is necessary preparation
- Promote “explanatory models” and communication skills (e.g., Listen, Explain, Acknowledge, Recommend, Negotiate [LEARN] framework²⁹)
- If locally allowed, HIC trainees may provide supervised services within scope of training and ability as assessed in the local LMIC setting
- Recognize that trainee independence is often decreased because of language and cultural discordance, lack of familiarity with formularies, resource level, and local standards of care
- Recognize that ethics and professionalism should travel across borders

Principle 2: STEGHs must foster bidirectional participatory relationships

- Adopt paradigm focusing on local capacity building and participatory program priority setting between HIC and LMIC stakeholders
- Determine scope of STEGHs through bipartisan collaboration and community engagement rather than unilateral “aid”
- Engage other disciplines (e.g., anthropology, public health) to help develop bidirectional relationships between local community and visiting institution
- Support reverse innovation and reciprocity of opportunities
- Focus on community development rather than solely learner skills or visiting institution prestige

Principle 3: STEGHs should be part of longitudinal engagement that promotes sustainable local capacity building and health systems strengthening

- Optimize resources to address locally identified needs
- Avoid operating STEGHs as short-term “fixes” to long-term complex problems
- Create new funding models to increase participation, access, and exchange and to minimize power imbalances and inequities
- Focus on creating long-term capacity in public health, primary health care, and health systems

Principle 4: STEGHs must be embedded within established, community-led efforts focused on sustainable development and measurable community health gains

- Understand the roles of poverty and inequality, public health infrastructure, and human resources for health in promotion of long-term population health
- Understand that downstream clinical efforts may serve to delay morbidity or mortality rather than reduce them, and give consideration to a more upstream, root-cause focus
- Understand the limitations of repeated and/or isolated short-term efforts
- Ensure development and monitoring of appropriate outcome indicators
- Employ long-term planning to address development goals

Abbreviations: HIC indicates high-income countries; LMIC, low- and middle-income countries.

reassessed once in LMIC host settings, rather than assuming that levels of independence in novel LMIC settings mirror those afforded in familiar HIC training environments. Because of language and cultural discordance between STEGH participants and host communities, as well as novel formularies, standards of care, and treatment algorithms, it is often appropriate that trainees have less independence and scope of practice when

abroad. In other words, simply crossing international borders should not degrade professional and ethical standards and often requires trainees to take a step back in their scope of independent activities.

Principle 2: STEGHs must foster bidirectional participatory relationships

STEGHs have sometimes been referred to as “medical voluntourism,”³⁵ which may exacerbate economic and power differentials between provider and host

communities.³³ Short-term voluntourists and recipients can be characterized, respectively, as “people who travel easily and people who do not.”³⁶ The latter also often lack access to health care, food, and economic and political power and may feel unable to say no to charity in any form offered. Programs that do not actively combat this inequality gap will not sustainably address the long-term needs of those they aim to help. It is the responsibility of those who travel from more developed settings to ascertain the needs of those they desire to help, without preconceived notions of their own, and to partner with these communities to create mutually beneficial programs, such as the Medical Education Partnership Initiative (MEPI).³⁷

Health professionals traveling abroad may bring needed skills or equipment to LMICs, but unidirectional STEGHs run the risk of creating dependency by providing short-sighted fixes to long-term, complex problems.³⁵ Furthermore, physicians may not always be able to tackle these problems alone; multidisciplinary teams including public health experts, development practitioners, engineers, anthropologists, and others are often necessary.

For certain surgical specialties (e.g., cataract, cleft palate/lip, oral, and obstetric fistula repair surgery), providing downstream services by STEGH volunteers commonly removes pressure on local governments to provide and respond to health needs with long-term solutions, thereby “masking deeper ills of social, political and economic inequities.”²⁴ They also may create new and unforeseen issues (e.g., infections due to lack of appropriate follow-up) and perpetuate the illusion that foreigners are better able to address local needs.⁶ Longer-term solutions engage local providers in identifying areas to augment training capacity and developing plans to address these priorities, eventually phasing out external support within a defined timeline in favor of locally developed resources.³⁸ Successful examples include the Himalayan Cataract Project, which pairs local ophthalmologists with visiting experts to provide cataract procedures in rural areas of the world,^{39,40} and partnerships through MEPI.³⁷

Participatory bidirectional relationships also encourage “reverse innovation”—the adaptation of health care and innovative

successes developed in LMIC settings to HIC contexts.⁴¹ For example, community health and outreach programs in Africa and India have provided models for community health workers in New York City.⁴² In this manner, bilateral collaboration rather than unilateral aid can be ethical and instructive for all.⁴³ For trainees participating in STEGHs, those undertaken in the context of bidirectional institution-level relationships allow for modeling of ideal longitudinal global engagement.

Principle 3: STEGHs should be part of longitudinal engagement that promotes sustainable local capacity building and health systems strengthening

The shortage of human resources for health (HRH) is one of global health's biggest challenges.⁴⁴ STEGHs often focus on supporting the participants' interests and skills sets and their desire to help those in need. Too rarely do STEGHs prioritize the congruence between local LMIC community priorities and training interests with the abilities of visiting HIC participants. STEGHs must incorporate local needs/strengths and promote capacity building; good examples include the Himalayan Cataract Project referenced above, and MEPI "communities of practice."⁴⁵

STEGH participants are often self-funded. Together with the donation of financial and in-kind resources, they often represent a potential revenue source for local communities that could be used in building local capacity. This may not constitute cost-effective global health investment compared with high-impact, low-cost interventions, such as vaccines and water purification. However, research has shown that participants who spend thousands of dollars on STEGHs are unlikely to donate that amount instead.⁴⁶ Given this dynamic, the use of funds related to STEGHs to support larger projects targeted at host community impacts should be carefully explored. Channeling funds for STEGHs through institutional program fees, with visiting participants paying a sliding scale fee based on their own finances, may enable more people to participate while minimizing the power imbalances arising from a sense of entitlement and one-way charity. Participants' fees could partly allay the travel costs of host community members to the STEGH-sending country as well, resulting in true cross-cultural exchange.

Capacity development includes strengthening of long-term comprehensive primary health care in communities abroad, requiring that STEGH participants understand structural and social determinants of inequitable conditions.³⁵ Consequently, creation of effective capacity-building plans requires training and/or a familiarity with principles of international development, social determinants of health, and public health systems. A broader understanding of community health would optimize engagement with health systems development efforts. Although inclusion of capacity development in STEGHs may significantly alter learner expectations—from direct delivery of medical/surgical care to one of partnership, mutual education, and sustainability—such STEGHs hold the most promise for impact in the host community. This approach may prove ultimately more fulfilling for the returning learner, who might also apply such approaches at home.⁴²

Principle 4: STEGHs must be embedded within established, community-led efforts focused on sustainable development and measurable community health gains

Many populations in LMICs and subpopulations in HICs suffer from poor health and lack of access to health care, arising commonly from poverty, inadequate infrastructure, and HRH shortages.^{47,48} These provide a commonly seen impetus for STEGHs: to provide health care for people who otherwise would have limited or no access. Yet, long-term solutions for these communities need to involve local infrastructure and human resource development to avoid dependence on a repetitive and often disjointed cycle of STEGHs.

Downstream clinical efforts serve to delay morbidity or mortality rather than prevent the underlying condition.²⁴ Population health measures including education or awareness campaigns, or public health programs for vaccination or sanitation, might reduce the need for short-term outsiders filling in for local HRH. Global health organizations that have had success improving local population health and health care delivery often commit to long-term community engagement.

Traditional "medical missions" (both secular and faith based) reflect a certain paternalism by using HIC

health care standards as a benchmark for health in LMIC contexts. This tradition has the risk of prioritizing the needs of the sending institution over local realities and approaches. For instance, institutions may use their resources toward enabling the participant experiences and technical skills rather than focusing on long-term population health or HRH capacity building in communities abroad. This problematic approach is also evident in the mind-set that any LMIC can suffice to provide STEGH opportunities to learners. The locations for possible STEGH partnerships must be seen as more than an undifferentiated mass of "underdeveloped" communities with poor health. Participatory programs that emphasize increasingly common development principles of strengths-based approaches with local control may provide new models and paradigms for STEGHs to empower locals while avoiding the pitfalls of "philanthropic colonialism."⁴⁹

Monitoring STEGH sustainability and effectiveness requires the use of appropriate indicators, which must incorporate a longitudinal perspective. For example, if success is measured using process indicators (e.g., number of patients seen, successful surgeries, or prescriptions dispensed), service-focused STEGHs could be considered highly effective. However, if assessed in terms of health outcomes (e.g., change in disease occurrence or improved access to consistent medical services), STEGH effectiveness is less clear-cut, highlighting the need for a more longitudinal planning focus.²⁴

With appropriate indicators and principles, STEGH stakeholders can then identify program limitations and ensure program sustainability and impact. Some academic institutions have faculty members living and working abroad; this can augment local bandwidth for supervision of HIC trainees and STEGH impact assessment. Community-based organizations providing STEGHs can also invest in local capacity building in conjunction with STEGH operations.⁵⁰ Focusing on sustainability also supports efforts to address the rise of chronic disease in LMICs.⁵¹ STEGH preparation should reinforce training participants on the epidemiologic shift and an expanded definition of "tropical medicine" beyond infectious disease.⁵²

Applying STEGH principles: Focusing on community benefit

Applying these principles toward obtaining maximum benefit within host communities requires deployment of appropriate strategies across the entire spectrum of STEGH planning. These key strategies include assessment, data collection and dissemination, standards of quality, bidirectionality of agreements, formal curriculum definition, and ethical considerations.

Assessment. Existing professional groups should assess objectives, structure, monitoring and evaluation, cultural issues, and ethical concerns of STEGHs as they relate to medical education, as well as community impacts (both positive and negative). The American Public Health Association, American Academy of Family Physicians Global Health Workshop, Consortium of Universities for Global Health, and Network Toward Unity for Health are forums for this discussion. However, there is a need for increased focus on robust applications, which could include the use of assessment data to accredit STEGHs, develop uniform program standards (e.g., with respect to preparing trainees), and facilitate a paradigm shift that focuses on promoting participatory research and programming that prioritize elevating the voice and input of LMIC-based stakeholders.

Data. Professional organizations must take the lead in vetting STEGHs and providing this information to their members and the public. Internet searches reveal diverse STEGH opportunities, with no evidence on whether they conform to norms of practice. Although some organizations have created directories of STEGH programs, these are rudimentary and often lack sufficient information about program quality. This information gap also highlights the need for objective data on effective STEGH models that positively influence community health outcomes. Pouring resources into programs without transparency and quality improvement is not encouraged in any system. Effective deployment of online databases could allow the global health community to evaluate the ethics and sustainability of STEGHs. The first step to developing any such database would be for constituent stakeholders to

identify best practices for which data can be collected and analyzed against defined metrics, supported by medical education and global health funders.

Standards. STEGH practices should conform at minimum to defined quality standards established by regulators in the origin HIC, and must not be promoted as an opportunity to advance trainees' procedural skills or function clinically with reduced supervision. Local mentors of clinical activities during STEGHs should be compensated or otherwise recognized for their contributions to participants' education. Refinement of standards informed by data and assessment processes will act as a benchmark on which STEGHs can be measured. Programs that fail to meet expectations should not be supported by any stakeholder to continue without targeted improvements toward adherence with defined principles.

Bidirectionality. Identifying all stakeholders in STEGH opportunities is critical to avoid exacerbating existing inequalities within and between communities abroad, and between the host LMIC and sending HIC. Relevant models can be found in the community-based/community-driven⁵³ and community engagement⁵⁴ development literature. There should be explicit expectations by all parties through a memorandum of understanding, which should also include a timeline for sustainability, clarity of financial obligations and resource allocation, and mechanisms for conflict resolution.

Curriculum. Organizations and institutions sending trainees on STEGHs should define formal global health curricula, including competencies, predeparture training, on-site orientation, and cross-cultural effectiveness/cultural humility education for participants, along with robust postreturn evaluation and debriefing mechanisms.³⁷ Where possible, STEGHs should be embedded into broader international development efforts; this focus necessitates faculty development on community-based education principles.⁵⁵

Ethics. At all times, STEGHs should respect local laws, and focus as identified by local community partners, and should remember that broader ethical principles extend beyond international boundaries.

Conclusions: STEGHs Moving Forward

Growing interest in STEGHs should be channeled into interventions and programs demonstrated to be useful in improving global health and educating about complex determinants of health. To accomplish this improvement, the discourse around program implementation should refocus on STEGHs' impact on host communities, as well as the limitations of short-term trainee activities and necessity of longitudinal institution-level engagement. STEGHs must address, rather than perpetuate, underlying power imbalances, ethical pitfalls, resource differentials, and inequities that the global health movement seeks to eliminate. These principles must be consistently applied to capture the enormous potential of STEGHs to nurture globally engaged health professionals and institutional partnerships necessary to achieve global health targets and reduce health disparities locally and globally.

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M.K. Melby is assistant professor, Departments of Anthropology and Behavioral Health and Nutrition, University of Delaware, Newark, Delaware.

L.C. Loh is adjunct professor, Department of Clinical Public Health, Dalla Lana School of Public Health, University of Toronto, Toronto, Ontario, Canada, and director of programs, The 53rd Week, Brooklyn, New York.

J. Evert is executive director, Child Family Health International, and faculty, Department of Family and Community Medicine, University of California San Francisco, San Francisco, California.

C. Prater is internal medicine–pediatrics physician, Baltimore Medical System, Baltimore, Maryland.

H. Lin is attending physician, Children's Hospital of Philadelphia, Division of Gastroenterology, Hepatology, and Nutrition, assistant professor, Department of Pediatrics, University of Pennsylvania, Philadelphia, Pennsylvania, and executive director, The 53rd Week, Brooklyn, New York.

O.A. Khan is associate vice chair, Department of Family and Community Medicine, and director, Global Health Residency Track, Christiana Care Health System, Wilmington, Delaware, and associate director, Delaware Health Sciences Alliance, Newark, Delaware.

References

- 1 Martiniuk AL, Manouchehrian M, Negin JA, Zwi AB. Brain gains: A literature review of medical missions to low and middle-income countries. *BMC Health Serv Res*. 2012;12:134.
- 2 Crump JA, Sugarman J. Ethical considerations for short-term experiences by trainees in global health. *JAMA*. 2008;300:1456–1458.
- 3 Association of American Medical Colleges. Matriculating Student Questionnaire: 2012 All Schools Summary Report. Washington, DC: Association of American Medical Colleges; 2012.
- 4 Khan OA, Guerrant R, Sanders J, et al. Global health education in U.S. medical schools. *BMC Med Educ*. 2013;13:3.
- 5 Maki J, Qualls M, White B, Kleefeld S, Crone R. Health impact assessment and short-term medical missions: A methods study to evaluate quality of care. *BMC Health Serv Res*. 2008;8:121.
- 6 Wilson JW, Merry SP, Franz WB. Rules of engagement: The principles of underserved global health volunteerism. *Am J Med*. 2012;125:612–617.
- 7 Drain PK, Primack A, Hunt DD, Fawzi WW, Holmes KK, Gardner P. Global health in medical education: A call for more training and opportunities. *Acad Med*. 2007;82:226–230.
- 8 Faulkner LR, McCurdy RL. Teaching medical students social responsibility: The right thing to do. *Acad Med*. 2000;75:346–350.
- 9 Kasis I, Lak L, Adler J, et al. Medical relief operation in rural northern Ethiopia: Addressing an ongoing disaster. *Isr Med Assoc J*. 2001;3:772–777.
- 10 Dacso M, Chandra A, Friedman H. Adopting an ethical approach to global health training: The evolution of the Botswana–University of Pennsylvania partnership. *Acad Med*. 2013;88:1646–1650.
- 11 Dickson M, Dickson GG. Volunteering: Beyond an act of charity. *J Can Dent Assoc*. 2005;71:865–869.
- 12 Wilson L, Harper DC, Tami-Maury I, et al. Global health competencies for nurses in the Americas. *J Prof Nurs*. 2012;28:213–222.
- 13 Crump JA, Sugarman J; Working Group on Ethics Guidelines for Global Health Training (WEIGHT). Ethics and best practice guidelines for training experiences in global health. *Am J Trop Med Hyg*. 2010;83:1178–1182.
- 14 Atkins AM. New roles for missionary–MDs in Africa: ‘David Livingstone era’ is ended. *Am Med News*. 1978;21:22–23.
- 15 Loewenberg S. Medical missionaries deliver faith and health care in Africa. *Lancet*. 2009;373:795–796.
- 16 Allan T, Gordon S. *The Scalpel, the Sword: The Story of Doctor Norman Bethune*. Toronto, Ontario, Canada: Monthly Review Press; 1952.
- 17 Wilkinson L, Hardy A. *Prevention and Cure: The London School of Hygiene & Tropical Medicine, a 20th Century Quest for Global Public Health*. London, UK: Kegan Paul International; 2001.
- 18 International Committee of the Red Cross. *Founding: International Red Cross and Red Crescent movement is born*. <https://www.icrc.org/en/who-we-are/history/founding>. Accessed September 20, 2015.
- 19 Fox R. *Doctors Without Borders: Humanitarian Quests, Impossible Dreams of Médecins Sans Frontières*. Baltimore, Md: Johns Hopkins University Press; 2014.
- 20 WHO. *Methods and Needs. The First Ten Years of the World Health Organization*. Geneva, Switzerland: World Health Organization; 1958.
- 21 Fleet J. Another world: Working as a public health system employee overseas. *Can Fam Physician*. 2007;53:1978–1979.
- 22 Zink T. Reborn in Honduras. *Fam Med*. 2005;37:94–95.
- 23 Jogerst K, Callender B, Adams V, et al. Identifying interprofessional global health competencies for the 21st-century health professional. *Ann Global Health*. 2015;18:239–247.
- 24 Montgomery LM. Short-term medical missions: Enhancing or eroding health? *Missiology*. 1993;21:333–341.
- 25 Martiniuk AL, Adunuri N, Negin J, Tracey P, Fontecha C, Caldwell P. Primary care provision by volunteer medical brigades in Honduras: A health record review of more than 2,500 patients over three years. *Int J Health Serv*. 2012;42:739–753.
- 26 Kleinman A, Benson P. Anthropology in the clinic: The problem of cultural competency and how to fix it. *PLoS Med*. 2006;3:e294.
- 27 Luong ML. Training, communication, and competence: The making of health care professionals. *Yale J Biol Med*. 2009;82:177–179.
- 28 Tervalon M, Murray-García J. Cultural humility versus cultural competence: A critical distinction in defining physician training outcomes in multicultural education. *J Health Care Poor Underserved*. 1998;9:117–125.
- 29 Berlin EA, Fowkes WC Jr. A teaching framework for cross-cultural health care. Application in family practice. *West J Med*. 1983;139:934–938.
- 30 Cowperthwaite A, Saylor J, Carlsen A, et al. Healthcare theatre and simulation: Maximizing interprofessional partnerships. *Clin Simul Nurs*. 2015;11:411–420.
- 31 Grainger-Monsen M, Haslett J. *Worlds Apart: A Four-Part Series on Cross-Cultural Healthcare* [film]. Brooklyn, NY: Fanlight Productions; 2003.
- 32 Dupuis CC. Humanitarian missions in the third world: A polite dissent. *Plast Reconstr Surg*. 2004;113:433–435.
- 33 Pinto AD, Upshur RE. Global health ethics for students. *Dev World Bioeth*. 2009;9:1–10.
- 34 Friedman A, Loh L, Evert J. Developing an ethical framework for short-term international dental and medical activities. *J Am Coll Dent*. 2014;81:8–15.
- 35 Snyder J, Dharamsi S, Crooks VA. Fly-by medical care: Conceptualizing the global and local social responsibilities of medical tourists and physician volunteers. *Global Health*. 2011;7:6.
- 36 Redfield P. The unbearable lightness of ex-pats: Double binds of humanitarian mobility. *Cult Anthropol*. 2012;27(3):358–382.
- 37 Olapade-Olaopa EO, Baird S, Kiguli-Malwadde E, Kolars JC. Growing partnerships: Leveraging the power of collaboration through the Medical Education Partnership Initiative. *Acad Med*. 2014;89(8 suppl):S19–S23.
- 38 TheNet: Training for Health Equity Network Web site. <http://thenetcommunity.org/>. Accessed September 20, 2015.
- 39 HCP: Himalayan Cataract Project Web site. <http://www.cureblindness.org/>. Accessed September 20, 2015.
- 40 Tabin G, Chen M, Espandar L. Cataract surgery for the developing world. *Curr Opin Ophthalmol*. 2008;19:55–59.
- 41 Syed SB, Dadwal V, Martin G. Reverse innovation in global health systems: Towards global innovation flow. *Global Health*. 2013;9:36.
- 42 Hond P. The wages of health. *Columbia Mag*. Winter 2013–2014:31–37.
- 43 Syed SB, Dadwal V, Storr J, et al. Strengthening the evidence–policy interface for patient safety: Enhancing global health through hospital partnerships. *Global Health*. 2013;9:47.
- 44 Kim JY, Evans TG. Redefining the measure of medical education: Harnessing the transformative potential of MEPI. *Acad Med*. 2014;89(8 suppl):S29–S31.
- 45 Frehywot S, Mullan F, Vovides Y, et al. Building communities of practice: MEPI creates a commons. *Acad Med*. 2014;89(8 suppl):S45–S49.
- 46 Behdinan A, Lin E, Loh L, Lin HC, Scarth W. Intangible costs and benefits of short-term medical experiences in the Dominican Republic. Presented at: American Public Health Association Annual Meeting; November 4, 2013; Boston, Mass.
- 47 Kim JY. Time for even greater ambition in global health. *Lancet*. 2013;382:e33–e34.
- 48 Kim JY, Farmer P, Porter ME. Redefining global health-care delivery. *Lancet*. 2013;382:1060–1069.
- 49 McConnell D, den Bakker J, Kidini S, Bunyoli J. Participatory development in Maragoli, Kenya: Reflections on practicing anthropology. *Pract Anthropol*. Summer 2014;36:11–16.
- 50 Rassiwal J, Vaduganathan M, Kupershtok M, Castillo FM, Evert J. Global health educational engagement—a tale of two models. *Acad Med*. 2013;88:1651–1657.
- 51 GBD 2013 Mortality and Causes of Death Collaborators. Global, regional, and national age–sex specific all-cause and cause-specific mortality for 240 causes of death, 1990–2013: A systematic analysis for the Global Burden of Disease Study 2013. *Lancet*. 2014;385:117–171.
- 52 Abegunde DO, Mathers CD, Adam T, Ortegón M, Strong K. The burden and costs of chronic diseases in low-income and middle-income countries. *Lancet*. 2007;370:1929–1938.
- 53 Mansuri G, Rao V. Community-based and -driven development: A critical review. *World Bank Res Obs*. 2004;19:1–39.
- 54 Farnsworth SK, Böse K, Fajobi O, et al. Community engagement to enhance child survival and early development in low- and middle-income countries: An evidence review. *J Health Commun*. 2014;19(suppl 1):67–88.
- 55 Mariam DH, Sagay AS, Arubaku W, et al. Community-based education programs in Africa: Faculty experience within the Medical Education Partnership Initiative (MEPI) network. *Acad Med*. 2014;89(8 suppl):S50–S54.

Global Health Training

Ethics and Best Practice Guidelines for Training Experiences in Global Health

John A. Crump,* and Jeremy Sugarman,* and the Working Group on Ethics Guidelines for Global Health Training (WEIGHT)†
Division of Infectious Diseases and International Health, Duke University Medical Center, Durham, North Carolina; Duke Global Health Institute, Duke University, Durham, North Carolina; Kilimanjaro Christian Medical Centre, Moshi, Tanzania; Kilimanjaro Christian Medical College, Tumaini University, Moshi, Tanzania; Berman Institute of Bioethics and Department of Medicine, Johns Hopkins University, Baltimore, Maryland; Office of Global Health, Stanford University, Stanford, California; Researcher, Bioethics and Global Health, Pune, India; Fogarty International Center, National Institutes of Health, Bethesda, Maryland; Departments of Medicine and Public Health, Stony Brook University School of Medicine, Stony Brook, New York; Emory Global Health Institute, Emory University, Atlanta, Georgia; Naval Medical Research Center Detachment, Lima, Peru; Doris Duke Charitable Foundation, New York, New York; BMJ, London, United Kingdom; Clinical Research Unit, London School of Hygiene and Tropical Medicine, London, United Kingdom; Chula Medical Research Center (ChulaMRC), Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand; HIVNAT, Thai Red Cross AIDS Research Center, Bangkok, Thailand; College of Health Sciences, Makerere University, Kampala, Uganda

Abstract. Academic global health programs are growing rapidly in scale and number. Students of many disciplines increasingly desire global health content in their curricula. Global health curricula often include field experiences that involve crossing international and socio-cultural borders. Although global health training experiences offer potential benefits to trainees and to sending institutions, these experiences are sometimes problematic and raise ethical challenges. The Working Group on Ethics Guidelines for Global Health Training (WEIGHT) developed a set of guidelines for institutions, trainees, and sponsors of field-based global health training on ethics and best practices in this setting. Because only limited data have been collected within the context of existing global health training, the guidelines were informed by the published literature and the experience of WEIGHT members. The Working Group on Ethics Guidelines for Global Health Training encourages efforts to develop and implement a means of assessing the potential benefits and harms of global health training programs.

PREFACE

Educational institutions, foundations, and governmental and non-governmental organizations have shown a growing interest in applying their technical expertise, energy, talent, research capability, and resources to addressing global health challenges and disparities.¹⁻⁴ Students increasingly request global health content in curricula and often wish to experience global health challenges firsthand.⁵⁻⁷ Accordingly, global health educational programs frequently include field experiences that often involve crossing international borders and during which trainees often encounter ethical challenges related to cultural and professional differences.⁸

Health science students participating in global health field experiences have been shown to be more likely to care for the poor and ethnic minorities, to change focus from sub-specialty training to primary care medicine, to report improved diagnostic skills, and to express increased interest in volunteerism, humanitarianism, and public health.⁹⁻¹⁴ For these and other trainees, such experiences may form the foundations for a career focused on or oriented toward global health or may help them to decide against such a career.¹⁵ By offering short-term global health field experiences, sending institutions may strengthen their position to recruit trainees interested in

global health and to benefit from the appeal of such programs to funders and philanthropists.

Because global health is inherently interdisciplinary and multidisciplinary,¹⁶ students from a growing range of disciplines directly and indirectly related to health seek training in short-term experiences. Students also represent a range of levels and experience and may include undergraduate students, graduate students, and faculty wishing to expand their work into the global health arena. Bi-directional exchange programs offer trainees the opportunity to experience health issues in each other's environments. Experiences may vary in duration from as short as a few days to as long as 12 months and may vary considerably in quality.¹⁷ The goals of training experiences also vary; some can be viewed as training opportunities for the primary benefit of the trainee, whereas others claim to provide some form of service to the host or may involve research.^{18,19} However, little is known about the benefits and unintended consequences of global health training experiences to host institutions and host trainees and, if a component of service is anticipated, whether benefit is realized and at what cost.²⁰⁻²² Global health training that benefits the trainee at the cost of the host is clearly unacceptable; mutual and reciprocal benefit, geared to achieving the program goals of all parties and aiming for equity, should be the goal.¹ Exploitation of one partner for the benefit of another must be avoided.

Although global health training experiences offer potential benefits to trainees and to sending institutions and appear to be growing rapidly in scale, these experiences are sometimes problematic and raise ethical challenges.^{1,18,23-25} Such challenges include substantial burdens on the host in the resource-constrained setting; negative impact on patients, the community, and local trainees; unbalanced relationships among institutions and trainees; and concerns related to sustainability^{26,27} and optimal resource utilization. Although considerable attention has been given to ethical issues surrounding research conducted across international borders²⁸ and under circumstances

*Address correspondence to John A. Crump, Division of Infectious Diseases and International Health, Box 102359, Duke University Medical Center, Durham, NC 27710, E-mail: crump017@mc.duke.edu; and Jeremy Sugarman, Berman Institute of Bioethics and Department of Medicine, Johns Hopkins University, Hampton House 351, 624 North Broadway, Baltimore, MD 21205, E-mail: jsugarm1@jhmi.edu.

†Working Group on Ethics Guidelines for Global Health Training (WEIGHT) members include: Michele Barry, Anant Bhan, Pierce Gardner, Jeffrey P. Koplan, Ahaz T. Kulanga, Silvia M. Montano, Elizabeth Myers, Kirsten Patrick, John D. Porter, Alan C. Regenberg, Kiat Ruxrungham, Nelson K. Sewankambo, and John F. Shao.

SUMMARY POINTS

- Academic global health programs are growing rapidly in scale and number.
- Global health curricula often include field experiences that involve crossing international and socio-cultural borders.
- Although global health training experiences offer potential benefits to trainees and to sending institutions, these experiences are sometimes problematic and raise ethical challenges.
- The Working Group on Ethics Guidelines for Global Health Training (WEIGHT) developed a set of guidelines for institutions, trainees, and sponsors of field-based global health training on ethics and best practices in this setting.
- The WEIGHT guidelines address the need for structured programs between partners; the importance of a comprehensive accounting for costs associated with programs; the goal of mutual and reciprocal benefit; the value of long-term partnerships for mitigating some adverse consequences of short-term experiences; characteristics of suitable trainees; the need to have adequate mentorship and supervision for trainees; preparation of trainees; trainee attitudes and behavior; trainee safety; and characteristics of programs that merit support by sponsors.
- To refine the guidelines, WEIGHT encourages work aimed at developing and implementing means of assessing the potential benefits and harms to institutions, personnel, trainees, patients and the community in host countries of global health training programs.

of unequal wealth or power, much less attention has been given to the ethical issues associated with education and service initiatives of global health programs and no formal ethical guidelines are available for global health training experiences. To develop ethics and best practice guidelines, we formed the Working Group on Ethics Guidelines for Global Health Training (WEIGHT). The WEIGHT members were selected by JAC and JS through a process of consultation with leaders in global health and ethics. The goal was to select members with experience and expertise with global health training and ethics from a range of perspectives and geographic locations. Of 13 initial membership invitations, 10 (77%) accepted. Those who declined were replaced by persons with similar expertise and experience to create a balanced membership.

GUIDELINE DEVELOPMENT PROCESS

The international, peer-reviewed literature was searched for publications relevant to ethics of global health training and a paper was published raising ethical concerns for global health training programs.¹ Reflecting the nascent nature of ethics research and scholarship in the area of global health training, published literature on the topic represented case reports, case series, and expert opinion. Following the formation of WEIGHT, the literature review was updated and an annotated bibliography was sent to members. The WEIGHT met in person in March 2010 in London to draft a preliminary set of ethics and good practice guidelines through group discussion around ethical issues that have arisen for individuals and institutions that send or receive trainees in global health. The guidelines were developed through a moderated workshop format. All members were given the opportunity to raise and discuss dissenting views for each recommendation. Agreement was reached by consensus. The primary goal of the guidelines is to facilitate the structuring of an ethically responsible global health training program and to discourage the implementation and perpetuation of

imbalanced and inequitable global health training experiences and programs.

SCOPE OF THE GUIDELINES

The guidelines are structured to address the multiple stakeholders involved with global health training experiences. The main stakeholders are host institutions, including program directors, mentors, other faculty, and support staff based at the receiving institution; trainees both foreign and local; sending institutions, including program directors, mentors, administrators, and managers; patients and the community at the host site; sending countries, including committees or councils responsible for medical and research ethics, and other health professional education; and sponsors of global health training. The guidelines are designed to apply to multiple levels of trainees, including undergraduates, graduate and medical students, post-graduate students, and others such as faculty or other professionals seeking to apply or expand their skills in the global health arena. Although the guidelines are predominantly focused on ethical issues for programs sending trainees from wealthier to less wealthy settings, many of the principals also apply to bi-directional trainee exchanges. The guidelines encompass the multiple disciplines and multiple activities that take place under the umbrella of global health including in the clinical, public health, research, and education arenas. Although these guidelines were developed in response to the global health activities of educational institutions, the principles are applicable and adaptable to informal programs and individual global health efforts. They also apply to programs of varying duration, while recognizing that duration can affect the nature of issues encountered. Although the guidelines can apply to exchange programs locally and internationally, they are not intended to address ethics issues encountered during long-term (> 1 year) global health service or by experts providing technical assistance. The WEIGHT recognizes that the evidence available to inform the guideline development process was limited and expects that the proposed approach to global health training will be refined in the future as new data are accumulated.

GUIDELINES

Sending and host institutions. Well-structured programs seem to be the optimal means of ensuring optimal training programs in global health. Developing and maintaining well-structured programs generally involves a sustained series of communications and seems to have a common set of attributes as listed below, and may include clear delineation of roles and responsibilities of all parties, budgets, duration of attachments, participation in and distribution of written reports, and other products. We recommend that sending and host institutions should do the following:

1. Develop well-structured programs so that host and sender as well as other stakeholders derive mutual, equitable benefit including:
 - a. Discuss expectations and responsibilities of both host and sending institutions and agree on terms before program implementation; the terms may be outlined within a memorandum of understanding. Revisit the expectations and responsibilities on a periodic basis;

- b. Consider local needs and priorities regarding the optimal structure of programs;
 - c. Recognize the true cost to all institutions (e.g., costs of orientation, insurance, translation, supervision and mentoring, transportation, lodging, health care, administration) and ensure that they are appropriately reimbursed;
 - d. Aspire to maintain long-term partnerships so that short-term experiences may be nested within them; and
 - e. Promote transparency regarding the motivations for establishing and maintaining programs (e.g., to meet an educational mission, to establish a relationship that might be used to support research, to meet student need) and identifying and addressing any conflicts of interests and conflicts of obligations (e.g., to local patients, communities, or local trainees compared with the global health trainees) that may result from such a program.
2. Clarify goals, expectations, and responsibilities through explicit agreements and periodic review by
 - a. Senders and hosts;
 - b. Trainees and mentors; and
 - c. Sponsors and recipients.
 3. Develop, implement, regularly update, and improve formal training for trainees and mentors, both local and foreign regarding material that includes:
 - a. Norms of professionalism (local and sending);
 - b. Standards of practice (local and sending);
 - c. Cultural competence, e.g., behavior (local and sending) and dealing effectively with cultural differences;
 - d. Dealing appropriately with conflicts (i.e., professionalism, culture, scientific and clinical differences of approach);
 - e. Language capability;
 - f. Personal safety; and
 - g. Implications of differential access to resources for foreign and local trainees.
 4. Encourage non-threatening communication to resolve ethical conflicts as they arise in real-time and identify a mechanism to involve the host and sending institutions when issues are not readily resolved.
 5. Clarify the trainees' level of training and experience for the host institution so that appropriate activities are assigned and patient care and community well-being is not compromised.
 6. Select trainees who are adaptable, motivated to address global health issues, sensitive to local priorities, willing to listen and learn, whose abilities and experience matches the expectations of the position, and who will be good representatives of their home institution and country.
 7. Promote safety of trainees to the extent possible (e.g., vaccinations, personal behaviors, medications, physical barriers, security awareness, road safety, sexual harassment, psychological support, insurance and knowledge of relevant local laws).
 8. Monitor costs and benefits to host institutions, local trainees, patients, communities, and sponsoring institutions to assure equity.
 9. Establish effective supervision and mentorship of trainees by the host and sending institution, including the selection of appropriate mentors and supervisors and facilitating communication among them.
 10. Establish methods to solicit feedback from the trainees both during and on completion of the program, including

exit interviews, and track the participants post-training to evaluate the impact of the experience.

Trainees. Trainees themselves play an important role in the quality of global health experiences. It is essential that trainees understand their responsibility in this regard, not only to ensure their personal experience is a good one, but that their actions and behaviors can have far-reaching and important implications. To help meet such responsibilities, we recommend that trainees should do the following:

1. Recognize that the primary purpose of the experience is global health learning and appropriately supervised service. The duration of the training experience should be tailored so that the burden to the host is minimized.
2. Communicate with their local mentor through official channels regarding goals and expectations for the experience before the training, and maintain communication with mentors throughout the experience.
3. Learn appropriate language skills relevant to the host's locale as well as socio-cultural, political, and historical aspects of the host community.
4. Seek to acquire knowledge and learn new skills with appropriate training and supervision, but be cognizant and respectful of their current capability and level of training.
5. Participate in the process of communicating to patients and the community about their level of training and experience so that appropriate activities are assigned and patient care and community well-being is not compromised.
6. Recognize and respect divergent diagnostic and treatment paradigms.
7. Demonstrate cultural competency (e.g., personal dress, patient privacy, culturally appropriate and inappropriate gestures, gender issues, traditional beliefs about health, truth telling, social media) and engage in appropriate discussions about different perspectives and approaches
8. Take measures to ensure personal safety and health.
9. Meet licensing standards, visa policies, research ethics review, training on privacy and security of patient information, and other host and sending country requirements.
10. Follow accepted international guidelines regarding the donation of medications, technology, and supplies.^{29,30}
11. If research is planned as part of the training experience, develop the research plan early and in consultation with mentors, focus on research themes of interest and relevance to the host, understand and follow all research procedures of the host and sending institution, obtain ethics committee approval for the research before initiation of research, and receive appropriate training in research ethics.
12. Follow international standards for authorship of publications emanating from the global health experiences and discuss these issues and plans for presentations early in collaborations.
13. When requested, be willing to share feedback on the training experience and follow-up information on career progression.
14. When seeking global health training outside of a well-structured program, potential trainees should follow the guidelines for institutions (above) so as to maximize the benefits and minimize potential harms of such training experiences.

Sponsors. Sponsors of global health training programs understandably desire high quality experiences for trainees as well as minimizing any potential adverse consequences related to programs they support. By requiring recipients to be involved with high quality global health training programs as a condition of receiving funds, sponsors can play an important role in creating and maintaining such programs. Where practicable, we recommend that sponsors should do the following:

1. Promote the implementation of these guidelines.
2. Consider local needs and priorities, reciprocity, and sustainability of programs.
3. Ensure that the true costs are recognized and supported (e.g., costs of orientation, insurance, translation, supervision and mentoring, transportation, lodging, health care, administration, monitoring and evaluation).
4. Execute explicit agreements with recipients, with periodic review, to help clarify goals, expectations, and responsibilities.
5. Aim to select trainees who are adaptable, motivated to address global health issues, sensitive to local priorities, willing to listen and learn, whose abilities and experience match the expectation of the position, and who will be a good representative of their home institution and country.
6. Promote safety of trainees to the extent possible (e.g., vaccinations, personal behaviors, medications, physical barriers, security awareness, road safety, sexual harassment, psychological support, insurance, and knowledge of relevant local laws).
7. Encourage effective supervision and mentorship by the host and sending institution.
8. Require that sponsored programs comply with licensing standards, visa policies, research ethics review, training on privacy and security of patient information, and other host and sending country requirements.
9. Encourage the collection and evaluation of data on the impact of the training experiences.

CONCLUSIONS

Global health training programs are associated with a range of ethical issues for all stakeholders. These ethics and best practice guidelines set out a range of measures designed to minimize the pitfalls of such programs. It is hoped that these guidelines will be used to reassess and improve existing programs, be applied in the design of new programs, and, where necessary, promote the discontinuation of programs or activities that cannot meet basic practices described in these guidelines.

Although these guidelines are based on a range of published data and the unpublished experience of WEIGHT members in consultation with stakeholders, they have limitations. The principal limitation is the lack of available systematic data collected within the context of existing global health training programs reflecting the scope of programs and challenges experienced by partners. WEIGHT encourages work aimed at developing and implementing means of assessing the potential benefits and harms to institutions, personnel, trainees, patients, and the community in host countries of global health training programs. Data from such assessments would inform and support future refinement of these guidelines. Although efforts were made to ensure that WEIGHT represented a

range of perspectives and geographic locations, membership could be further expanded to include other groups such as trainees.

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Authors’ addresses: John A. Crump, Division of Infectious Diseases and International Health, Duke University Medical Center, Durham, NC, E-mail: crump017@mc.duke.edu. Jeremy Sugarman, Berman Institute of Bioethics and Department of Medicine, Johns Hopkins University, Baltimore, MD, E-mail: jsugarm1@jhmi.edu.

REFERENCES

1. Crump JA, Sugarman J, 2008. Ethical considerations for short-term experiences by trainees in global health. *JAMA* 300: 1456–1458.
2. Drain PK, Holmes KK, Skeff KM, Hall TL, Gardner P, 2009. Global health training and international clinical rotations during residency: current status, needs, and opportunities. *Acad Med* 84: 320–325.
3. Shah S, Wu T, 2008. The medical student global health experience: professionalism and ethical implications. *J Med Ethics* 34: 375–378.
4. Kanter SL, 2008. Global health is more important in a smaller world. *Acad Med* 83: 115–116.
5. McAlister CC, Orr K, 2006. A student’s plea for global health studies in the medical school curriculum. *Clin Invest Med* 29: 185–186.
6. Drain PK, Primack A, Hunt D, Fawzi WW, Holmes KK, Gardner P, 2007. Global health in medical education: a call for more training and opportunities. *Acad Med* 82: 226–230.
7. Shah SK, Nodell B, Montano SM, Behrens C, Zunt JR, 2010. Clinical research and global health: mentoring the next generation of health care students. *Glob Public Health* 14: 1–13.
8. Edwards R, Piachaud J, Rowson M, Miranda J, 2004. Understanding global health issues: are international medical electives the answer? *Med Educ* 38: 688–690.
9. Godkin M, Savageau J, 2003. The effect of medical student’s international experiences on attitudes toward serving underserved multicultural populations. *Fam Med* 35: 273–278.
10. 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.
11. Miller WC, Corey GR, Lallinger GJ, Durack DT, 1995. International health and internal medicine residency training: the Duke University experience. *Am J Med* 99: 291–297.
12. Ramsey AH, Haq C, Gjerde C, Rothenberg D, 2004. Career influence of an international health experience during medical school. *Fam Med* 36: 412–416.
13. Thompson MJ, Huntington MK, Hunt DD, Pinsky LE, Brodie JJ, 2003. Educational effects of international health electives on U.S. and Canadian medical students and residents: a literature review. *Acad Med* 78: 342–347.
14. Smith JK, Weaver DB, 2006. Capturing medical students’ idealism. *Ann Fam Med* 4 (Suppl 1): S32–S37.

15. Varmus HE, 1998. National Institutes of Health in the tropics. *Am J Trop Med Hyg* 59: 24–28.
16. Koplan JP, Bond TC, Merson MH, Reddy KS, Rodriguez MH, Sewankambo NK, Wasserheit JN, for the Consortium of Universities for Global Health Executive Board, 2009. Towards a common definition of global health. *Lancet* 373: 1993–1995.
17. Wilkinson D, Symon B, 1999. Medical students, their electives, and HIV: unprepared, ill advised, and at risk. *BMJ* 318: 139–140.
18. DeCamp M, 2007. Scrutinizing global short-term medical outreach. *Hastings Cent Rep* 37: 21–23.
19. Provenzano AM, Graber LK, Elansary M, Khoshnood K, Rastegar A, Barry M, 2010. Perspective: short-term global health research projects by US medical students: ethical challenges for partnership. *Am J Trop Med Hyg* 83: 211–214.
20. Hardcastle TC, 2008. Ethics of surgical training in developing countries. *World J Surg* 32: 1562.
21. Kingham TP, Muyco A, Kushner A, 2009. Surgical elective in a developing country: ethics and utility. *J Surg Educ* 66: 59–62.
22. Ramsey KM, Weijer C, 2007. Ethics of surgical training in developing countries. *World J Surg* 31: 2067–2069.
23. Bhat SB, 2008. Ethical coherency when medical students work abroad. *Lancet* 372: 1133–1134.
24. Dowell J, Merrylees N, 2009. Electives: isn't it time for a change? *Med Educ* 43: 121–126.
25. Pinto AD, Upshur REG, 2009. Global health ethics for students. *Developing World Bioeth* 9: 1–10.
26. Jesus JE, 2010. Ethical challenges and considerations of short-term international medical initiatives: an excursion to Ghana as a case study. *Ann Emerg Med* 55: 17–22.
27. Suchdev P, Ahrens K, Click E, Macklin L, Evangelista D, Graham E, 2007. A model for sustainable short-term international medical trips. *Ambul Pediatr* 7: 317–320.
28. Singer PA, Benatar SR, 2001. Beyond Helsinki: a vision for global health ethics. *BMJ* 322: 747–748.
29. World Health Organization, 2000. *Guidelines for Health Care Equipment Donations*. World Health Organization, ed. Geneva: World Health Organization, 26.
30. World Health Organization, 1999. *Guidelines for Drug Donations*. World Health Organization, ed. Geneva: World Health Organization, 20.