



Conquering HIV and Stigma in Kenya

Rebecca Voelker

IT WASN'T UNTIL AFTER HE RETIRED from the Indiana University School of Medicine (IUSM) faculty in 1999 that Joseph Mamlin, MD, encountered what he calls "a physician's worst nightmare."

Throughout the wards of Moi Teaching and Referral Hospital in Eldoret, Kenya, beds were overflowing with young people dying of AIDS. The scene was a far cry from what Mamlin had witnessed in Eldoret in the early 1990s as team leader of a collaborative medical education program between IUSM and the Moi University College of Health Sciences (MUCHS).

"In 1992, I watched 85 patients die on our medical wards over the course of a year," he says. "When I returned in 2000, I saw over 1000 patients die [during a similar time frame] on the same number of beds."

Colleagues say Mamlin became frustrated and depressed. "There were so many dying, and he couldn't do anything about it," says William Tierney, MD, director of research with the IUSM-MUCHS program.

A Kenyan medical student named Daniel changed that. He was so debilitated from AIDS that two of his fellow students came to the referral hospital to spoon-feed him. The sight lit a fire under Mamlin and he refused to let the young man die. Tierney recalls that Mamlin wrote to friends and colleagues in the United States, asking for donations of money and antiretroviral medications (ARVs). He got up to speed on HIV treatment via e-mail. A \$2000 donation from a friend allowed Daniel's ARV therapy to begin, and after a few weeks he was up and feeding himself.

That was in 2001. No ARVs were available in and around Eldoret. Stigma blanketed the region; silence still equaled death in this part of sub-Saharan Africa. When Daniel left the hospital, Mamlin tried to get him a hotel room near the medical students' dormitory. "The management kicked him out the next day," he says. "They were afraid to be near him." So Mamlin and his wife, Sarah Ellen, helped Daniel move to the IU compound in Eldoret.

Cytomegalovirus infection has impaired Daniel's vision to the extent that he has withdrawn from medical school. Instead, he leads the AIDS Integrated Movement, a group of about 400 HIV-infected volunteers who organize support groups, community education, and outreach programs. "He is a recognized authority in his new field," says Mamlin.

DRAMATIC TRANSFORMATION

The role of Daniel's recovery in galvanizing a response to HIV/AIDS in his community and beyond cannot be underestimated. "His transformation changed the focus of my medical ca-

reer, the IU program in Kenya, and the attitudes toward HIV of all who knew him," Mamlin observes. His recuperation also sparked the creation of an Academic Model for the Prevention and Treatment of HIV/AIDS in Kenya, better known as AMPATH.

When it began officially in late 2001 as part of the IUSM-MUCHS partnership, AMPATH's overriding goal was to establish adult and pediatric HIV care centers at the urban referral hospital and in the Mosoriot Rural Health Center, about 15 miles southwest of Eldoret, which is Kenya's fifth largest city.

In the last 3 years, AMPATH has been able to establish those two HIV clinics, as well as two additional rural care centers. Four more rural sites were expected to be up and running by the end of June, bringing to eight the number of centers in a network for HIV care that extends through western Kenya to the Ugandan border.

Currently, AMPATH sites care for more than 4000 patients with HIV and AIDS. "We are adding patients at a rate of about 800 per month," says Robert



Food, medications (including antiretroviral drugs), and voluntary counseling and testing for HIV are made available at this distribution site in Kenya. The site is the product of an innovative partnership between medical schools in the United States and Kenya.



Einterz, MD, assistant dean for international affairs at IUSM and director of the IUSM-MUCHS partnership. About half of the patients receive ARVs—most take a regimen of nevirapine, stavudine, and lamivudine.

Patients start ARV therapy when their CD4 cell count is below $200 \times 10^6/L$ or they develop an AIDS-defining illness. Because ARVs are in short supply, some patients who remain reasonably healthy at the CD4 cutoff are not started on ARVs.

“We regret doing this, but we had to ration our very limited supply,” says Einterz. AMPATH has stretched its limited funds by buying generic ARVs from the Indian pharmaceutical company Cipla.

In February 2003, AMPATH got a financial boost when the MTCT-Plus Initiative, a consortium of funding agencies that supports HIV/AIDS treatment in developing countries, selected the IUSM-MUCHS partnership as a demonstration site. The MTCT-Plus funds provide HIV-infected pregnant women with triple-drug therapy (stavudine, lamivudine, and nevirapine in a single combination pill for easy adherence) during their last trimester to prevent mother-to-child transmission. The funding also provides ARVs *for life* for up to 750 HIV-infected mothers and all their family members who need triple-drug therapy.

New mothers with HIV infection also are counseled to avoid breastfeeding. “Alternative feeding for infants of mothers diagnosed positive is a challenge,” says Winstone Nyandiko, MBChB, a lecturer at MUCHS. “We, however, have had wonderful success in using formula in those mothers . . . the children grow well.”

FUNDING RELIEF

In February 2004, AMPATH leaders got a bigger financial boost. The partnership will receive a 5-year, \$15 million grant from the President’s Emergency Plan for AIDS Relief (PEPFAR) created by the Bush administration. The grant is part of a \$125 million award to the Columbia University Mailman School of Public Health in cooperation with the US

Centers for Disease Control and Prevention for a multicountry ARV program in Africa. Another \$1.6 million PEPFAR grant for the partnership is administered through Columbia and the US Agency for International Development.

Together, the PEPFAR grants will cover treatment costs for 30 000 patients in AMPATH’s eight HIV centers. That’s a vast improvement from just one patient—Daniel—just 3 years ago. But in reality, landing a major PEPFAR grant has taken 15 years. A full understanding of AMPATH’s success requires a trip back in time to 1989, when the IUSM-MUCHS collaboration formally began.

It was the brainchild of Mamlin, Einterz, and two other colleagues who had experience in international health through the Peace Corps or other organizations. They wanted other Indiana faculty and medical students to experience the same satisfaction they had felt by working overseas.

“There was no avenue for that unless you joined a religious mission; we wanted to create that avenue for others to become involved,” says Einterz. “It was [Mamlin’s] vision that IU, as a medical school, should link with another school for mutual benefit,” he adds.

After considering schools in Nepal, Kenya, and Ghana, they settled on Kenya because Moi University was just launching its medical school. “It was new, it was intriguing,” says Einterz. Moi health sciences faculty members created their new curriculum from scratch; the IUSM group assisted in curriculum and faculty development.

For nearly a decade, support came from a mosaic of funds from IU, various individuals, philanthropy groups, US government agencies, and international organizations. The partnership initially was intended to build medical training and primary care delivery systems that in time would serve as a foundation for collaborative research.

After the first Moi medical class graduated in 1997, Tierney guided a major collaborative research effort that produced the first outpatient electronic medical record system in sub-Saharan Africa and helped bridge the “digital divide” that

separates industrialized and developing countries. In the Mosoriot Rural Health Center, the innovation shortened patient visits by 22% and cut patient waiting time by 38% (*J Am Med Inform Assoc.* 2003;10:295-303).

The electronic medical record system also is used to submit public health data to the Kenyan Ministry of Health, which now ranks the Mosoriot center first among all Kenyan health centers in terms of the speed, accuracy, and completeness of its monthly reports. And it contributes to AMPATH research in areas that include ARV treatment outcomes and the impact of treatment on microeconomics in villages that surround Mosoriot.

COMPREHENSIVE APPROACH

In fact, AMPATH’s objectives go beyond provision of highly active antiretroviral therapy (HAART) and prophylaxis for opportunistic infections. On 10 acres of land donated by a local high school is the HAART and Harvest Initiative, a farm that produces healthful foods for HIV-infected patients’ nutritional needs and provides agricultural training so recovering patients can become self-supporting. Similarly, the Family Preservation Initiative helps families learn to generate income for personal and medical needs.

The partnership’s accomplishments have not gone unnoticed. In the mid to late 1990s, a few other US medical schools joined in, forming the America/Sub-Saharan African Network for Training and Education in Medicine, or ASANTE. In Swahili, one of Kenya’s two national languages, the acronym means “thank you.”

One of the first to join was the Brown University School of Medicine. E. Jane Carter, MD, director of the Brown-Kenya Program, is working to improve the infrastructure for tuberculosis care. “One of the reasons this collaboration is so successful is that it doesn’t just focus on one issue,” she says. Each of the partners in the collaboration takes on a different comorbidity of HIV. As a result, says Carter, “the whole is bigger than the sum of its parts.”



Even though half or more of US medical schools are involved in international collaborations, experts say the IUSM-MUCHS partnership is unique. "Other schools have not started what IU has in terms of fundraising and the comprehensive program of clinics—and a farm," says M. Brownell Anderson, MEd, senior associate vice president of the Association of American Medical Colleges.

Anderson agrees with Einterz and others that the partnership is reproducible. Officials at the University of Utah School of Medicine are talking with leaders at the medical school in

Kumasi, Ghana, to do just that. "We've talked about mimicking what Indiana has done in Eldoret," says Devon Hale, MD, Utah's dean of international medical education who has spent time with Mamlin in Mosoriot.

Hale credits the longevity of the partnership to the fact that IUSM and MUCHS focused first on education rather than timebound research or financial benefits. He and others say that while US medical schools have good intentions, they sometimes come to developing countries with grants and a predetermined research agenda.

"They do research and leave," says Hale. By focusing on education, says Einterz, the medical community in Eldoret eventually can become self-sustaining.

The partnership's progress can be measured in many ways—numbers of patients treated with ARVs and prevention of mother-to-child HIV transmission, for example. But progress also is measured by the lessening of stigma and silence. Now, says Mamlin, "one can speak openly about HIV in the villages where we work . . . and hope abounds on our wards." □

Small Loans Yield Big Health Profits

Brian Vastag

IN COUNTRIES HARD HIT BY THE AIDS epidemic, basic needs often go unfulfilled, rendering medical care an unattainable dream. But one innovative program—a kind of public health perpetual-motion machine—is helping families cope with the epidemic by providing the means to allow them to help themselves.

Run by Project HOPE, a Norfolk, Va, nonprofit organization, the 11-year-old Village Health Bank offers small loans to collectives of 10 to 20 women in Malawi, Thailand, and 5 other developing countries. Women who receive loans attend twice-monthly health education sessions, tailored to local needs, while repaying the principal and small amounts of interest.

"The beauty of this model is that it takes this collective from a single village and then uses that as an instrument of health prevention and education," said Renslow Sherer, MD, director of the infectious diseases unit at Project HOPE. "You have to have the stuff of life, a home and a sustainable source of food. And then maybe you can begin to make gains against the disease."

The program has helped some 50 000 women since its inception in 1993, dispensing \$25 million in so-called microcredit. Each 4-month loan aver-

ages around \$100, enough to launch small-scale trading, craft work, and animal husbandry. Along the coffee-heavy slopes in the highlands of Guatemala, village women buy goats and chickens to raise and sell at market, using part of the profits for Pap tests and other preventive health care, said Juan Carlos Lau, director of that country's health banks. Likewise, women in Malawi buy grain from neighboring Mozambique. During a recent drought, they hauled it home for a tidy profit, helping their families and their villages through tough times.

Three of the 7 countries served by the Village Health Bank program—Ecuador, Guatemala, and Peru—have programs that are now self-sufficient, said

program director John Bronson, MA; they bring in enough interest to cover administrative costs and to pay local health educators. Project HOPE continues running the programs in Guatemala and Peru, but it spun off the Ecuador bank into an independent organization after it attracted more than 10 000 women.

"In most public health programs, when the dollars stop, the intervention stops," said Bronson. "But a successful [Village Health Bank] program can become financially self-sustainable on a long-term basis."

MALAWI'S CHALLENGE

Bronson said that the Malawi bank, now in its fifth year, is approaching self-sufficiency, good news for village



Women who are members of a Village Health Bank program in Malawi that provides small business loans and health education learn how the program and group should operate.

Project HOPE Malawi