Health Wanted

How public health expert Courtenay Dusenbury and a loose alliance of feisty nuns, Bill and Melinda Gates, exhausted midwives, mosquito hunters, and Ministries of Health are conspiring to save lives in poor countries like Mozambique

BY MARY J. LOFTUS PHOTO BY MICHAEL BARRIENTOS
In the dormitory-style women’s ward, patients too ill to leave rest on rows of cots. Although several of the women and girls are awake, there is no casual chatter, only a weary silence. Through the open window, a gentle puff of warm afternoon air drifts through the room like a sigh.

The hospital—an airy structure with soaring arches, dark-wood doors, a red tile roof, and whitewashed walls in the mission style of its benefactor, the Catholic Church of Spain—was built to treat tuberculosis patients. The staff began treating AIDS as well after discovering in the late 1990s that one in three of its patients had the virus, says Verdu; that number is now four in five.

Unlike tuberculosis (TB), which can be cured with antibiotics, chronic conditions like AIDS require a more sophisticated level of coordination and follow-up care. “It has become routine for our patients to have both, and as AIDS increases, so does TB,” Verdu tells a visiting group of doctors, researchers, and public health experts as she leads them through the courtyard to the patient record room.

Speaking in rapid Portuguese, she explains to the group that the hospital keeps double records—paper and electronic files—for each of its thirteen thousand open cases. The staff maintains contact with nine thousand patients, four thousand of whom are on antiretroviral drugs. “It would be impossible to manage without computers,” Verdu says.

Or, one might imagine, without the hospital’s extremely devoted staff of nuns, local health workers, and volunteers such as Marcela Cherner Kevorkian. “It was very important for me to come here to see another reality,” says Kevorkian, a medical student from Spain’s University of Valencia, one of the oldest universities in the world. “They do amazing work here with very limited resources.”

The charity hospital, which is supported by the church, private donations, and government funding, provides all services and medications at no charge to its patients. It also serves as a data collection and research site for Mozambique’s National Institute of Health.

The small delegation touring El Carmelo this May afternoon includes Courtenay Dusenbury O’88MPH, who is intimately familiar with Mozambique’s widespread public health problems.

**BIG-PICTURE STRATEGY**

Dusenbury is director of the U.S. Secretary of the International Association of National Public Health Institutes (IANPHI) in Emory’s Global Health Institute. Funded largely by the Bill and Melinda Gates Foundation, IANPHI links and strengthens public health institutes—responsible for disease detection, outbreak investigation, health education, and research—around the world. Its nearly seventy members include the U.S. Centers for Disease Control and Prevention (CDC), China’s CDC, the United Kingdom’s Health Protection Agency, and Fiocruz in Brazil.

Right now, IANPHI (yes, the association’s title is a mouthful, and everyone simply calls it by its acronym, eye-an-fee) is focusing on long-term projects in ten developing countries: Bangladesh, Ethiopia, Ghana, Guinea-Bissau, Malawi, Morocco, Nigeria, Tanzania, Togo—and Mozambique. A sub-Saharan country nearly twice the size of California that stretches between South Africa and Tanzania, Mozambique has become a model case for IANPHI due not only to its vast needs as one of the poorest countries in the world, with distressingly high rates of infectious diseases, but also for its vision of self-determination.

“It was one of the first countries to prohibit outside donors, including the U.S. government, from building their own labs there,” Dusenbury says. “They said, if you want to invest, let’s do it together. The Ministry of Health wants to set its own priori-
ties, to develop its own labs and researchers and clinicians. That’s as it should be.”

An intrepid traveler, Dusenbury is still a bit pale from a recent infection of Rocky Mountain Spotted Fever caught, ironically, from a tick in her own Atlanta backyard. She has been to Mozambique half a dozen times in the past three years and visited many other countries where IANPHI has ongoing projects. Her boys, eight and eleven, know that when their mother pulls her suitcase out of the bedroom closet, she’s off on another trip.

But Dusenbury makes it work. She’s a school room mother with a pile of frequent flier miles, juggling carpool and field trips with meetings with ministers of health. And when she’s overseas, her husband, George Dusenbury, commissioner for Parks, Recreation, and Cultural Affairs for the City of Atlanta, fills in.

Right now, she is headed back to her Maputo hotel in a government-issued SUV—winding past avenues named for Vladimir Lenin and Karl Marx and Mao Tse Tung, heroes of the revolution, past the historic Portuguese train station and the new glass-walled shopping mall, past tall cinderblock apartment buildings and shops made of corrugated steel.

Although a bit jet-lagged, Dusenbury takes in the scenery eagerly, pointing out a botanical garden with bats swooping low over the trees and the Iron House designed by Alexandre Gustav Eiffel in the late nineteenth century—built as a home for the governor, yet never occupied, since a metal house in a tropical climate does not make for comfortable living.

Just across from the newly constructed modern hotel is a simple house with several chickens pecking about its neatly raked dirt yard. On a nearby sidewalk, young men sell decorative wooden bowls and carved animals spread on blankets for tourists to peruse. Children approach cars with bunches of bananas and fire-roasted cashews. A small boy walks by pulling a black and white goat with a rope around its neck. “I love Mozambique,” Dusenbury says. “Some countries have more money, but less quality of life. People are very upbeat here, they have a national sense of pride. Very few Mozambicans choose to leave Mozambique.”

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—HEALTH STRATEGIST COUR TENAY DUSEN BURY 08MPH

PRAGMATISTS: Sister Maria Elisa Verdu, left, runs the Hospital El Carmelo for patients with AIDS and TB; public health strategist Courtenay Dusenbury 08MPH, above, is helping the Ministry of Health in Mozambique execute an ambitious plan that includes building a comprehensive National Public Health Institute.

HOME WORK: Although she travels frequently and far, Dusenbury juggles her job with parenting sons George, eleven, and William, eight.
Before coming to Emory, Dusenbury worked as a legislative director in the U.S. House of Representatives, and she has a bachelor’s degree in journalism from Penn State as well as a master’s in public health from Rollins. She acts as a kind of public health coach on IANPHI projects: What and where are the country’s most pressing needs? What structures must be in place for these needs to be met? Where will donor money have the most long-term impact? Who should work together so efforts aren’t duplicated? With expertise in strategic planning, organizational management, and policy, she’s more likely to be found in an all-day meeting hashing out three-year objectives than in a rural province handing out mosquito bed nets.

“There’s only so much that can be done village by village,” Dusenbury says. “You have to have a national infrastructure, a central plan, milestones, a budget.”

**Money is Not Enough**

After decades of patchwork measures and feel-good projects, donor-driven mandates and pharmaceutical-driven research, and—perhaps most damming of all for developing countries—external aid shaping internal priorities, what is most needed is what Emory Professor Emeritus of Global Health Bill Foege calls “the discipline of collaboration.”

Charitable foundations, governmental agencies, billionaire philanthropists, and nongovernmental organizations (NGOs) alike, he says, can greatly increase impact though communication, collective problem solving, and accountability based on measurable results.

“Across global health, we lack coordination in tackling major diseases and threats, such as HIV/AIDS. So we squander resources by duplicating efforts or leaving gaps in the populations we serve, and millions suffer and die needlessly,” says Foege, former director of the CDC and consultant to the Gates Foundation, in the preface to the recent guidebook *Real Collaboration: What It Takes for Global Health to Succeed.* “To prevent this misery, we need to join forces… . Medical knowledge is not enough. Western leadership is not enough. Money is not enough.”

As a growing global association of some seventy national public health institutes, IANPHI is in a prime position to help low-resource countries through peer-to-peer modeling. “Our programs are unique in this era of disease-specific donor assistance,” says the association’s president Jeff Koplan, former director of the U.S. CDC and head of Emory’s Global Health Institute. “Giving governments the resources needed to develop their own organizational missions and capacity will have longstanding effects on their ability to identify and address public health problems in the decades to come.”

**Sand, Sea, and HIV**

For all of Mozambique’s gifts, which are prompting a resurgence of tourism here—from the endless stretches of white sand beaches along the Indian Ocean to the nightclubs with live reggae and jazz to the seaside eateries that serve giant prawns and piri-piri chicken—the country carries a heavy load of burdens.

It may be the land of “sand and sea… . among the lovely people living free, upon the beach in sunny Mozambique” from the Bob Dylan song, but it is also one of the twenty-poorest countries in the world, with slightly more than half of its twenty-three million residents living in poverty.

After gaining independence from five centuries of Portuguese rule in 1975, Mozambique endured nearly two decades of civil war—many here call it a guerilla war, since the rebels were largely funded by South Africa’s apartheid ruling elite—that claimed nearly one million lives from fighting and famine before a peace agreement was reached in 1992. Fiercely proud of its free market, open elections, and self-governance, the country still struggles with scattered corruption, a hefty dependence on foreign aid, and natural disasters such as severe floods in 2000 and 2001 that set back its fledgling progress.

Today, Mozambicans have an average life expectancy of forty-eight years. Chronic malnutrition affects four in ten children, and malaria is the number-one killer of children under five. Clean water and proper sanitation are hard to come by, especially in rural areas, and the majority of children suffer from parasites, for which they need medication.

The main threat to adults is HIV/AIDS. Nearly 12 percent of the population has the virus (and often TB or other AIDS-related illnesses as well), according to the country’s first comprehensive report on the prevalence of the virus. In testing nearly seventeen thousand people from Mozambique’s ten provinces last year, the health ministry and the national statistics department found that women were the hardest hit by AIDS, with 13 percent affected, compared with 9 percent of men. Rates were highest in the southern provinces.
of Maputo and Gaza, the main travel routes to South Africa. About five hundred people are newly infected with the virus every day—mostly women.

“Anything above five percent means the country is in a tragic situation,” said Minister of Health Paulo Ivo Garrido, announcing the findings in July. “A prevalence rate of 11.5 percent is already twice as much. The Mozambican government considers AIDS the first threat to the country.”

A severe lack of health care workers hampers efforts to improve these dispiriting statistics. Mozambique averages about one doctor for every seventy thousand residents. Some rural areas have no doctors, nurses, or local health clinics at all, relying solely on traditional healers. Very little exists in the way of disease detection and outbreak investigation.

There are promising signs that the country is stepping up its own public health efforts: Garrido, a former heart surgeon, is working with 

A nurse, twice a year
The day after Dusenbury’s arrival in Maputo to review the progress of INNPHTI’s projects, Mbofana takes her to a small village in the Chokwe district of the Gaza province, Massavasse, a few hours north of the capital.

Leaving the city, the road narrows to two lanes and cuts through sugarcane and rice fields. Termite mounds as tall as a man dot the landscape. Children wearing backpacks race to school along well-worn pathways. Old, stooped women tend small subsistence gardens in front of thatched cane huts; men fish with nets in a narrow river.

“Parasites and amoebas are huge problems here—75 percent of children are infected by parasites. We distribute chloride drops, but only when there’s a cholera outbreak, not routinely. Clean water is a big problem, but sanitation is an even bigger problem,” Mbofana says. “Very few people use latrines.”

About five thousand people live in the village, and most of the families make their living by farming. Nearly a fourth of the men work abroad, mostly in the mines in South Africa, and send money home.

Under the shade of a low concrete building that serves as the village clinic, a group of mothers, most holding babies and infants, has formed a line to have them dosed with antiparasitics by a visiting nurse, Joana Sitoi. She comes twice a year to provide vaccinations, check the children for malnutrition, and treat infections, such as scabies.

“We have had good success with parents here allowing their children to get their shots,” Sitoi says. “That is not always the case in other villages.”

The most common diseases Sitoi sees are pneumonia, malaria, diarrhea, upper respiratory infections, bacterial skin infections, and malnutrition. The clinic has one bed, a cabinet filled with boxes of oral contraceptives, some posters about teeth brushing, and UNICEF boxes decorated with pictures of soccer balls encouraging donors to “Kick polio out of Africa.”

MOSQUITO HUNTING
In Massavasse, the group connects with Nelson Cuamba, director of entomology for the National Institute of Health, who is collecting mosquitoes from rural areas for malaria studies at the city’s central labs. He holds out a paper cup with gauze over the top, secured by a rubber band, so Dusenbury can hear the buzzing cargo inside. “It’s
not the big ones you have to worry about,” he says. “It’s the small ones. Sometimes you can’t even tell when they bite you.”

Cuamba has done research on malaria for years, writing articles for medical journals about such topics as transmission and proximity to breeding sites, and the impact of flooding on the species of mosquitoes that spread the disease.

He favors collection by manual aspirators—simple tubing with a filter on one end. Mechanical aspirators, he says, are too rough and destroy the insect in the collection process, crushing them or breaking their legs. “You must be gentle,” he says, demonstrating on a wall of the clinic. “For our research, we need them alive and unharmed, living long, laying eggs.”

As the group leaves the village, bumping along a dirt road with deep ruts, they pass by a group of older children doing calisthenics in a field before their school lessons and a boy herding several cows.

Massavasse was nearly wiped out in the Limpopo River flooding ten years ago, but has rebuilt. “Villages like this are really the source of new information about what is happening,” Dusenbury says. “The records they keep and research being done here can impact how the government makes decisions and distributes resources.”

They drive into Chokwe proper, which has brightly colored houses, busy streets, a pool hall, restaurants, and new construction, stopping at a café for a brunch of cheese toast and coffee. The group meets up with the National Institute of Health’s director of parasitology Ricardo Thompson, a former veterinarian who is now an epidemiologist. “There are constraints on a lot of aid money, that it can’t be spent on bricks and mortar,” says Thompson, who is conducting research at El Carmelo hospital and renting a space for his research from the church. “But without a building to work in, to set up research equipment and computers, what can you do?”

Battling the infamous government bureaucracy is yet another obstacle. “Even small steps take so much effort, you could not believe it,” he says. “It’s a challenge, but we need to fight on.”

**BRICKS AND MORTAR**

Through a complex series of negotiations, the front-burner project that Dusenbury and IANPHI are working on with the Ministry of Health in Mozambique is just such a bricks-and-mortar project: constructing a building for the newly created National Institute of Public Health.

Key partners include the U.S. CDC in Maputo, which is contributing its own funds and will oversee nine million dollars in PEPFAR funding; Brazil’s Fiocruz; and architectural firm HDR CUNHA, which contributed the design work.

Mozambique’s current National Institute of Health is housed on two floors in the solid but aging Ministry of Health in Maputo, which has limited lab space and dangerous conditions for research involving biobehaviors. A needs assessment completed in 2006 found that a new location was desperately needed. “The old facility was so decrepit, it would have been foolhardy to invest,” Dusenbury says. “The recommendation was that we not do anything until we had a new building.”

Because IANPHI does not have funds for facility construction, other donors were sought, including the U.S. and Brazilian governments. After four years of extensive planning and frustrating delays, Dusenbury is excited to see the large, grassy field in Marracuene, just north of Maputo City, that the government has purchased for the institute. “Our own CDC started as a malaria lab in Atlanta and took over a hundred years to develop,” she says. “Mozambique is way ahead of that curve.”

Since 2006, Dusenbury, Fiocruz Director of Planning Felix Rosenberg, and the CDC’s laboratory adviser Beth Skaggs have worked as a team with Mozambique’s National Institute of Health Director Ilesh Jani to form a three-year strategic plan for the institute. A graduate of Eduardo Mondlane University, Jani is a witty, self-deprecating physician and immunologist who has gained the respect of his staff and external agencies alike.

In the past, Mozambique has had to return substantial donor funds because it had no standardized data collection system and was not able to assure donors that the funds could be put to immediate good use. “This is the right moment to act,” Jani says. “A shift is happening, acknowledging a need to rethink the system. Everyone is on the same page. Integration may not happen all at once, but the direction is clear. We have a plan of what we want to achieve in the next few years and it is very ambitious.”

**BEARING THE BURDEN**

As a huge, luminous moon rises over the ocean, Dusenbury, Jani, Mbofana, and Rosenberg meet over dinner to discuss progress made and critical needs as yet unmet. District health officials have been put in place but there are still no teams to conduct outbreak investigations. Expensive research equipment from donors like the government of China remains stacked up in boxes, without the funds, facilities, or technicians to put it to use. And important data and samples must be sent to labs outside the country for analysis, which wastes valuable time.

After a recent diarrheal outbreak, public
health workers sent samples off to South Africa; the results—that the outbreak was typhoid fever—took a month.

“The new facility will have labs that can do this kind of testing and people trained to work there,” Dusenbury says. “If the lab had been here you’d have been able to diagnose the illness in two days and saved a lot of lives.”

The group turns in early, in anticipation of an important meeting the next day with Minister Garrido on the top floor of the Ministry of Health in downtown Maputo.

Garrido, a distinguished man who runs the ministry with the order and precision expected of a former surgeon, is unfailingly jovial and polite to visitors and seems genuinely interested in their opinion of his country, from its beach resorts to its health strategies.

Research and development within Mozambique is the key, Garrido tells the planning group: “As Mr. Gates said when I had dinner in his Seattle home with other ministers of health, ‘Science should be the priority in any third-world country.’”

Mozambique’s health workers are its heroes, Garrido says. “The burden of disease and lack of resources,” he adds, “becomes the burden of the work to which they are subjected.”

FOR WANT OF A PUMP
This is certainly true for Eulalia Domingos Uqueio, a young midwife at Manjangue Health Center. The center serves a village of 21,331—although that number could actually be 21,332, the staff says, if an expected baby has arrived overnight.

From 7:00 a.m. to 3:00 p.m., the small staff sees about 140 patients a day, for health concerns from ob-gyn checkups to eye exams to mental illness. By 11:30 in the morning, the line stretches around two sides of the run-down building. Those waiting are almost exclusively women and children. “The men do not like to ever admit they are sick,” says a nurse.

Patients clutch paper numbers to show the order in which they arrived. One woman’s eye is swollen shut; a toddler has a seeping skin lesion on his leg; a baby with pneumonia is being examined in a treatment room.

For five years, Uqueio, who is twenty-five but appears even younger, has delivered nearly all of the babies in the village. She also performs prenatal and postnatal checkups, and provides childhood vaccinations. Uqueio has had two years of training as a midwife, and would like to go to medical school someday and become a doctor, “if I could find a way,” she says.

As she examines one pregnant woman, another sits on the floor in the corner of the room, holding her newborn twins. Modest houses beside the center have been set up for women about to deliver who live far away, so they don’t have to travel once labor begins.

On busy days, the clinic runs out of antibiotics, but its main problem is that it lacks running water. There is a well, but the pump has been broken for five years, so the staff has to collect water and bring it inside to use.

Uqueio shows the visitors the delivery room—with its dry sink and buckets—and the hash marks recording the number of births that week. Then the center’s medical technician leads the group outside and down a hill to see the broken pump, which stands in the middle of a field. Everyone solemnly examines the machinery.

A new pump might cost $2,500 to $5,000, he estimates.

Dusenbury looks toward Rosenberg, who has become a friend as well as a colleague. He knows she is fighting an impulse to buy the health center a pump with her own checkbook.

“You cannot buy everything that is needed,” he tells her quietly.

“It is one pump,” she says.

“It is not just one pump,” he replies.

Dusenbury knows he is right—that they need to focus on priorities that are larger than one town, one health center, one midwife, one baby.

But even strategic, organized, pragmatic public health consultants can be betrayed by their emotions, every now and again.
Concerns about the aftermath of natural disasters and conflicts, infectious diseases, tobacco use and obesity, pollution and food-borne toxins, injuries and other health related losses that compromise national security and productivity are pushing countries to boost their ability to identify and prevent health crises. National public health institutes (NPHIs) play a crucial role in these efforts by coordinating countries’ efforts to protect and improve health.

The International Association of National Public Health Institutes links the world's top public health experts who work together to improve public health in low-resource countries and ultimately ensure the health of people everywhere.

Since 2006, IANPHI has funded some 50 projects in 35 low-resource countries where our support has helped strengthen NPHIs or has helped create new ones. IANPHI-funded NPHI development projects have leveraged more than $50 million in technical assistance, financial support, equipment, and in-kind services from other countries, organizations, and donors.

To find out how you can support IANPHI’s outreach, contact Courtenay Dusenbury, director of IANPHI’s Atlanta Secretariat, cdusenb@emory.edu or 404-727-1416.

Mozambique has attracted PEPFAR and U.S. CDC funds for a new central public health facility (top), expected to begin construction in 2012. A woman responds to survey questions about water, sanitation, and hygiene (center). Patients wait at a Maputo clinic (above).