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What Yale physicians and medical students  
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# On the wards in Uganda

Story and Photographs  
by John Curtis

For Yale physicians and medical students, a few weeks at Mulago Hospital in Kampala become a life-changing experience.



In the infectious disease ward at Mulago Hospital in the Ugandan capital of Kampala, a woman in her early 20s lies on a bed with only a thin sheet to ward off the morning chill. Alone, suffering from complications from AIDS, her few possessions in a cardboard box at her bedside, she has no family to bathe her, bring her food or give her medicine. These are what doctors here call poor “blanket signs.” The mere presence—or absence—of a blanket speaks volumes.

Even before they measure the blanket signs, however, the doctors know several things about their patients. They know that as a national government-run referral hospital, Mulago receives the sickest of the sick. They know that more than half the patients in the hospital are infected with HIV. They know that two-thirds of their patients will die in the hospital or within two months of leaving it. And they know that most of their patients are too poor to afford more than the most basic tests and treatments.

Blanket signs will tell them more. The hospital provides patients with a bed. Patients must bring sheets, blankets and pillows, as well as “attendants”—family members who care for them. The doctors have learned that just having a blanket reveals much about a patient’s economic status. Of necessity, the patient’s ability to pay will drive the treatment regimen. If the patient has no resources, the doctors will prescribe only the drugs that come free from the pharmacy and order only the tests that the hospital provides at no cost.

“Medicine is not all about what you have learned in medical school,” said Robert Kalyesubula, M.D., a Mulago resident. “You prioritize. In the context of the limitations you have, what can you best do for this person? What is going to help my diagnosis best? You talk to them so they find a way to get the money, sacrifice a few things. You save the most expensive tests for last, when you really need them.”

### Making an impact on the globe

Improving patient care in New Haven as well as in Kampala is the goal of a collaboration that began in August 2006, when Majid Sadigh, M.D., associate professor of medicine, arrived at Mulago with a team of Yale residents. Since then Yale has maintained a constant presence at the hospital, with Yale residents and attendings in monthlong rotations alongside colleagues from the Faculty of Medicine at Makerere University and Uganda’s Ministry of Health. In the summer of 2007 Yale expanded its presence to include three medical students on new international fellowships (See sidebar, p. 29); a physician from Russia; two Downs Fellows; two public health students pursuing research projects; and students from the Physician Associate Program in addition to three Yale residents.

The collaboration grew out of Sadigh’s visit to Uganda in 2002 to lecture and teach about infectious disease. Why, he wondered, was the extraordinary clinical, medical and epidemiological research taking place at Makerere not finding its way literally across the street to improve care at Mulago Hospital? Yale, he felt, could help. “It is one of the best universities in the world,” he says. “It has a vision of having an impact on the globe. It has the most talented individuals.”

In the face of despair and crushing poverty Sadigh has implemented several ideas, large and small, that have made things better for people in Uganda. In the fishing village of Kasensero, the home of the earliest-known AIDS case in Uganda, Sadigh has helped patients at the local clinic and raised money to provide an education for orphans. At the nearby Holy Family Nazareth School, a boarding high school where most of the 250 students have been orphaned by AIDS, he has raised money for bunk beds and solar panels to provide lighting. And at Mulago he has kept the exchange going for more than a year with support from Yale’s Department of Internal Medicine and the Yale/Johnson & Johnson Physician Scholars in International Health program, which funds residents’ trips to Mulago.

When Sadigh first contemplated the collaboration in 2002, he and Asghar Rastegar, M.D., vice chair of medicine, had already launched a successful program between Yale and the state medical school in Kazan, Russia. Residents from both countries have traveled back and forth for clinical rotations for several years. With support from Rastegar and

**PREVIOUS PAGE** With an attendant nearby and blankets, sheets and a pillow on her bed, this patient had what doctors at Mulago Hospital call good “blanket signs.” What the patients bring with them gives doctors clues to their financial resources and helps doctors tailor their treatment plans.



On the cardiology ward, José Evangelista, a third-year Yale resident, rounded with Caroline Bwango, a resident, and Simon Eleku, a medical registrar, or junior faculty, at Mulago Hospital last summer. Evangelista returned to New Haven with a stronger appreciation of the physical exam. “Before jumping to a test I go back to the physical exam to see if I missed anything,” he said. “I don’t order labs nearly as much as I used to unless there is a rationale.”



In a laboratory at Mulago Hospital, technician Samson Omgot showed the Yale residents how to test for malaria in a blood sample. Throughout their time in Uganda, the residents saw diseases or stages of disease that are rare in the United States. “They are extremely good at what they do,” said Yale resident Mike Lee, left, describing his Ugandan colleagues. “They can show us so many things in working with limited resources. Their knowledge of tropical medicine is amazing.”



This patient, a 75-year-old mechanic with diabetes and hypertension, kept a notebook detailing his medical condition over the previous 10 years. “He needs more insulin,” said Peter Ellis, an attending at Yale-New Haven Hospital, after looking over his records. “His sugars are too high.” Ellis suggested a higher dose of insulin at lunch to cover the heaviest meal of the day.

David L. Coleman, M.D., HS '80, interim chair of internal medicine, Sadigh laid the groundwork for the Uganda exchange. By the summer of 2006 both sides had signed a memorandum of understanding.

Both Yale and Makerere, they believed, could benefit from an exchange that would not, in the words of Rastegar, be an exercise in “medical tourism.” Yale doctors would learn more about tropical and infectious diseases, while Ugandan doctors would gain access to the latest medical standards and methods.

In practice, however, the lessons that Yale students, residents and attendings learn from their Ugandan colleagues go much deeper than improving clinical skills and acquiring knowledge. The Mulago rotations bring into question basic notions about medicine and the very concept of what it means to be a doctor. This soul-searching begins on the first encounter with the wards at Mulago.

At the 1,500-bed hospital Yale physicians have few of the tools they take for granted in the United States. Patients in Mulago are often in a hospital for the first time in their lives and little or no medical history is available. They arrive in an advanced stage of disease. The hospital pharmacy may have run out of basic medications. No one is available to take a patient downstairs for an X-ray. Test results may take days to arrive. One Yale student took to carrying a blood pressure cuff with her on rounds since none was available. During a teaching session the students wandered the wards in search of a working light box so they could look at X-rays. And it's not always clear who's in charge of a patient, making sure that tests are done and medications are administered.

“When people come here they can really feel bewildered,” says Sam Luboga, M.D., deputy dean of the Faculty of Medicine at Makerere University. “They find a hospital full of patients without drugs, without supplies.”

That brings them to a new appreciation of the basic skills of medicine, says Christophe K. Opio, M.D., an internist at Mulago. “You have to make a diagnosis from the little information you have,” he says. “You become an investigator. You use all of your senses to identify a problem and then know what to do about a problem.”

From their Mulago colleagues Yale doctors learn to rely on the most basic tools of medicine—a rigorous physical examination, whatever history can be gleaned from the patient and their own knowledge of disease. And that is



During their stay in Uganda, Yale attendings and students went on house calls on the outskirts of Kampala. Traveling with a team from St. Stephen's Hospital, a private facility in the suburb of Mpererwe, they made follow-up visits to patients. The hospital treats about 10,000 patients a year from a catchment area that includes Mpererwe and adjoining neighborhoods. Malaria accounts for more than a third of the cases at the small hospital, which operates on fees and with support from charities in the United Kingdom. Sam Luboga, the deputy dean at Makerere University's Faculty of Medicine, started the hospital about 20

years ago. Hospital administrator Charles Mugume explained the importance of the house calls. "They come, we treat, we discharge. Then we follow up," he said.

Majid Sadigh led house calls in July, accompanied by his son, Kaveh, a medical student at Tulane, and Matt Cook, who graduated in October from Yale's Physician Associate Program. The team from St. Stephen's Hospital included the hospital administrator, a midwife, a social worker and an attendant. The catchment area is not a suburb like any in the United States. Few roads are paved and the houses, often of brick or cinder block, are surrounded

by plantain trees or small pastures for grazing goats or cows.

**TOP LEFT** Sadigh tended to an 85-year-old woman with multiple problems, including hypertension and cataracts that could lead to glaucoma.

**BOTTOM LEFT** Charles Mugume, administrator of St. Stephen's Hospital, took a patient's blood pressure.

**TOP RIGHT** Peter Ellis led house calls with medical students Allison Arwady and Lily Horng. Their day started with rounds at the hospital, where they were served a typical Ugandan lunch of rice,

*matoke* (mashed plantain) and stew. At the home of a 75-year-old mechanic, Ellis reviewed the patient's medications.

**BOTTOM RIGHT** House calls often involved a search for the patient's home. Medical student Allison Arwady struck up a conversation with a patient's relative during one search.



Mulago resident Robert Kalyesubula, 31, comes from Luwero, a town about 60 kilometers north of Kampala, where he spent part of his residency. “When I practiced in my hometown I realized that there were so many patients so far from doctors,” he said. His experiences during the civil war that followed the overthrow of Idi Amin led to his decision to help people by becoming a doctor. His father died in the fighting and Kalyesubula was separated from his mother. He also lost siblings to war, disease and starvation. Sponsored by a Canadian charity, Friends in the West, he was

raised in an orphanage and as a child toured the United States as a member of the African Children’s Choir. Later he went to McMaster University in Canada as part of a medical exchange. “There is a lot to learn between the two of us,” he said of the Makerere-Yale collaboration. “We know a lot about infectious diseases. They know a lot of modern medicine. We exchange at that level.” His main lesson for Yale medical students was, “how you can actually manage patients by having a very good clinical exam.”

the main lesson. “You’re not a doctor if you can only function in a certain milieu,” Sadigh says. “Sometimes there’s just you and the patient.”

### The Harvard of East Africa

Any discussion of health care problems in Uganda starts and ends with money. Uganda is a poor country; annual per capita income is about \$280. Foreign aid accounts for half the national budget revenues. The country has dismal health indicators—life expectancy, 52 years; infant mortality, 67 per 1,000 live births. The risk of bacterial diarrhea, hepatitis A, malaria and African sleeping sickness is very high.

And the country is still recovering from the turmoil that followed independence from Great Britain in 1962. Nine years later, when General Idi Amin seized power in a coup, Ugandans welcomed him as a relief from the autocratic President Milton Obote. Within a year Amin began to expel the country’s Asian population—brought to Africa as civil servants by the British—who, Ugandans felt, unfairly dominated the economy. The Asians also made up a significant portion of the medical school faculty.

“I had just started medical school when Amin came to power,” said Nelson Sewankambo, M.D. He is the sixth Ugandan dean of the Faculty of Medicine, a post he has held for almost a decade. “We saw the exodus of expatriate staff at the time. Ugandans and Africans also left.”

As Amin targeted his enemies, real and perceived, Sewankambo said, academics “became suspect.” Several doctors at the medical school were murdered, including one who was snatched from the operating room. By 1979, when neighboring Tanzania invaded Uganda over a border dispute and Amin fled to exile in Saudi Arabia, Mulago Hospital had no working X-ray machines, no running water, no refrigeration in the morgue and no sewage system. The General Medical Council of the United Kingdom no longer recognized Makerere medical degrees.

This loss of recognition was a stunning reversal for both the medical school and the university that had been known as the Harvard of East Africa. Makerere University opened in 1922 as a technical school. Over the next few years it added courses in agriculture, veterinary medicine and teacher training. In 1924 the precursor to the medical school, the School for Senior Native Medical Assistants, opened at Mulago Government Hospital. Even the school’s

name reflected the colonial view that Africans were incapable of becoming doctors. By 1929, however, the school for medical assistants had become the Faculty of Medicine, graduating not assistants but fully qualified physicians. The university advanced in other areas after it affiliated with the University of London in 1949. By 1962 Makerere was East Africa's leading educational institution, producing several presidents of new African nations, including Julius Nyerere of Tanzania. In 1963, following Uganda's independence, Makerere joined with universities in neighboring Kenya and Tanzania to form the short-lived University of East Africa.

Makerere, like the rest of the country, fell on hard times during the Amin era and the civil war that followed. Fighting ended in 1986, when Yoweri Museveni's guerrilla band took power. Museveni has ruled ever since, providing stability in Uganda if not true democracy or transparency.

As peace came to the country Makerere University sought to regain its former prestige. An opportunity emerged for the Faculty of Medicine in the early 1980s on the shores of Lake Victoria, where a mysterious ailment was plaguing the fishing village of Kasensero, about 60 miles southwest of Kampala.

In 1982 people in the village began dying of a disease the locals called "slim" because of its wasting effect. The disease was AIDS but no one knows how it reached the village. HIV had made the leap from monkeys to humans years earlier in Cameroon on Africa's western coast. Some speculate that the AIDS virus crossed the continent with the construction of a trans-Africa highway. Others blame its arrival in Uganda on the invading Tanzanian army. However the virus arrived, it turned this village and its brothels into the epicenter of the Ugandan AIDS epidemic. Since then much of the leading research on AIDS in Africa has been done at Makerere.

"From the beginning the medical school has been the flagship of Makerere University. There is good research on HIV. There is groundbreaking research on malaria as well. Burkitt's lymphoma was described by a professor here," said Sewankambo, a prominent AIDS researcher. Yet problems persist. "Makerere continues to struggle in raising resources. ... The salaries are awful, for example. Laboratories are run-down. The equipment is old."

The medical faculty at Makerere has long enjoyed help from abroad. Before implementing a new problem-based cur-

riculum in medicine, faculty members visited 14 universities around the world. And international collaborations don't end there. Makerere's medical school has many foreign partners—Case Western Reserve University; Johns Hopkins University; the University of California, San Francisco; the University of Medicine and Dentistry of New Jersey; McMaster University in Canada; the University of British Columbia; the University of Dublin; and the University of London. The Yale-Makerere collaboration, however, stands apart.

"Other universities say, 'Let's collaborate on research.' Yale is interested in improving the quality of health care services and the education of physicians," says Sewankambo. "By improving education we are training health workers to provide quality services within the context of limited resources."

#### **"That is how we survive."**

In resource-poor Mulago Hospital, the Yale residents and students rotating through the wards last summer incurred a debt to their Ugandan hosts that they doubted they could repay. As they worked side by side with Ugandan colleagues their physical examination skills soared; they learned about tropical diseases; and they saw what were for them uncommon cases of advanced disease. The three medical students agreed that Mulago provided their best clinical rotation by far. But they all wondered how much they were helping Mulago Hospital in return. How could they repay the hospital for all that they were learning? If Yale residents and even attendings struggle in the absence of resources that are second nature to them, what can they teach physicians who lack those resources?

"You can always help, even when the facilities are not as good as where you are from," says Edward Ddumba, M.D., executive director of Mulago Hospital. Echoing Sadigh, he adds, "You cannot be paralyzed by different institutions. People adapt."

Ddumba has no trouble imagining where he'd spend more money if he had it. He'd like to double the number of physicians on staff from 400 to 800 and increase the nursing staff as well. Among his other goals are "to get the infrastructure repaired ... to get hospital furniture, hospital linens, improve laboratory services, improve emergency drug supplies and emergency response infrastructure using capital budget."

Most of his \$15.6 million annual budget comes from the Ugandan government. Private wards on the sixth floor

generate additional income and the hospital also relies on international donations of supplies, money and drugs. “That is how we survive,” Ddumba says.

Sadigh believes Yale doctors also provide a significant contribution to the hospital. In the first year of the program, said Sadigh, Yale residents provided 90 weeks of coverage at the hospital and attendings provided 60 weeks. They set an example by modeling different attitudes and ways of practicing medicine and interacting with patients. “If we have any impact on Mulago, we have an impact on the whole country,” Sadigh says, “because Mulago is setting the standard for care and education for the country.”

Among the tangible benefits are the medical supplies that Yale visitors bring from Recovered Medical Equipment for the Developing World (REMEDY), a Yale-based organization that salvages surgical supplies and other unused materials that can’t be used in the United States. The visitors also bring journals and textbooks. From his office at Yale, librarian Mark Gentry has made online medical resources and textbooks available to Makerere students and faculty in Kampala.

“Through this program we have been able to get a lot of reading materials, which I think makes us better able to look up issues and treat our patients,” said Mulago resident Fred Semitala, M.D., a graduate of Makerere. Semitala would like to see more Ugandans train at Yale. So far, three have traveled to New Haven. “If we train a hematologist or a nephrologist, then that person is going to train five or more,” he says, adding a caveat. “Training without the facilities to use doesn’t help. A cardiologist couldn’t do a better diagnosis if he doesn’t have EKG.”

Ali Moses, one of three Ugandan trainees to come to Connecticut, spent four months at Waterbury Hospital and Yale-New Haven Hospital learning about evidence-based medicine, diagnostic skills and patient management protocols. “The Yale elective provides an opportunity to appreciate the practice of ‘ideal’ clinical medicine, which can be used as a standard or benchmark for and basis for improvement in general clinical care,” he said in an e-mail from Kampala.

Other benefits are intangible yet no less important. A Yale second-year resident, Michael X. Lee, M.D., who was in Uganda last summer, tried to introduce evidence-based medicine while on the wards. Evidence-based medicine, a concept that emerged more than 25 years ago, applies the

latest and best evidence to make medical decisions. “A lot of things are practiced because that is the way it has been practiced for years,” Lee said. “I try to ask the Ugandan residents, ‘What is the evidence for what you just said?’”

“I think where we can really help is in role modeling,” said José Evangelista, M.D., a third-year resident who was at Mulago last summer. “It is my role to help by teaching.”

All the visitors at times felt overwhelmed by the hospital.

“You are frustrated on so many levels,” said Samit Joshi, M.D., a third-year resident. “At a system level you wish the hospital had more free services and more basic tests or better nursing care or better doctor care. At a public health level you wish there were enough prevention campaigns so that people don’t come in with HIV or malaria or schistosomiasis.”

“It is easy to walk into a situation and be overwhelmed. There is also a different way of looking at it,” said Lee. “They save a lot of lives in Mulago. They have treated many people successfully. We have a lot of respect for the people that work here.”

### Life at the Edge

If the Mulago experience caused the residents and students to question what it means to be a doctor, the living arrangements altered the traditional hierarchy of students, residents and attendings. Residents and attendings don’t usually share bedrooms and bathrooms or see each other in shorts and T-shirts every evening. Nor do residents typically see an attending ironing his shirt in the morning. The Mulago setting also made for a round-the-clock learning experience—the talk around the house was usually about medicine.

Home for the Yale team was the Edge Guest House on the 300-acre campus of Makerere University. The walled university, sitting on a hill of the same name, is a haven of calm against the bustle of Kampala, where the air fills with the exhaust of countless *matatus*—minivans that provide public transport—motorcycles and taxis. And the Edge, a complex that includes a six-bedroom house and two smaller outbuildings enclosed inside a wall, provides further insulation from the city.

In the house was a revolving cast of characters that included Sadigh, four residents, two public health students, a physician associate student, a resident from Columbia University, a resident from New York University, and Sadigh’s son, Kaveh, a medical student at Tulane University. A few



One of the goals of the collaboration is to offer Yale attendings, residents and medical students a chance to understand not just Ugandan health care, but also the country's culture and politics. One field trip took medical students to the Patiko-Ajulu Internally Displaced Persons Camp near Gulu in northern Uganda near the Sudanese border. This camp houses about 10,000 people forced to leave their homes by the Lord's Resistance Army, a rebel group that opposes the Ugandan government and is known for kidnapping children to serve as soldiers.

**ABOVE LEFT** Children wandered about the Patiko-Ajulu camp on a weekend in July.

**LEFT** A young woman of 17, a day after giving birth to her son in the camp's clinic.

**ABOVE** The Yale group also visited Kasensero, a fishing village on Lake Victoria, and the epicenter of Uganda's AIDS epidemic. At the local clinic, which has received some support from Yale faculty, villagers offered songs and dances in honor of their foreign visitors.

blocks away most of the team's female contingent—five medical students—shared an on-campus apartment.

Mornings at the Edge began around seven o'clock as residents and students prepared hot water for tea and ate breakfast—avocado sandwiches were one resident's favorite—before heading for Mulago Hospital. The 25-minute walk took the residents and students through the green lawns and crumbling sidewalks of the university to the eastern gate on busy Bombo Road. Traffic lights are almost nonexistent in Kampala. Traffic circles called roundabouts control the flow of vehicles at intersections. Frequent speed bumps on busy roads slow down traffic enough for pedestrians to scurry across.

From Bombo Road the path to Mulago follows a dirt track into a shantytown called Katanga. Although Katanga is safe during the day, the Yale team is advised to avoid the

slum after dark. The path descends into the Katanga valley, past a soccer field, past grazing cows and goats, past a small brick factory, up the dirt track and across another busy thoroughfare to the back entrance of Mulago Hospital.

At the hospital residents and students started the day with morning report. "We find out how the patient is doing. Together we come up with a management plan for the day for the patient. Interspersed with that is the opportunity to do peer teaching," said Lee.

During one day's rounds through the infectious disease ward, Joshi worked with Patrick Komakech, M.D., a Mulago intern, and Rasikh Tuktamysvov, M.D., from Kazan, Russia, who was in Uganda at Sadigh's invitation. Joining the team was Rachel Smith, a fourth-year medical student from the University of California, San Francisco.

The patients included a woman who looked to be a teenager but was 24. She lay on a bed covered only by a sheet, with no attendants to look after her. HIV-positive and anemic, she had been vomiting. The next patient was a 40-year-old woman complaining of vomiting, fever and headache. The differential diagnosis suggested malaria and the doctors administered quinine through an IV. Another patient had good blanket signs—a suitcase for her belongings and an attendant sitting at her bedside with a cup of tea. The patient's diagnosis was cryptococcal meningitis, a common infection in patients with low CD4 counts.

Among the day's patients was a 20-year-old woman with AIDS who had been abandoned by her husband. He had made it clear to the hospital that he didn't want her back. Although she was not sick enough to remain in the hospital, she was too sick to be on her own. A social worker intervened and the husband took her back.

By noon, rounds are usually over and the medical teams break for lunch in the hospital canteen on the second floor. Lunch can be snacks—small pizzas or fried meat pies—or a buffet that offers a heaping plate of rice, sweet potatoes and *matoke* (mashed plantain) covered by a bean, beef or goat stew.

After lunch the residents may perform tasks that usually fall to nurses in the United States, such as drawing blood for tests or removing fluid from patients' abdomens. On-call days are the same, except that between 4 and 5 p.m. they go to the casualty ward and evaluate new patients, determine the primary problem, and triage them to such different services as gastroenterology, infectious diseases, renal, pulmonary, cardiology or neurology.

Two or three evenings a week, Sadigh set up two laptops in the living room of the Edge Guest House for his talks on infectious diseases. He also arranged for classes in Luganda, one of the country's principal languages, talks on Ugandan history by a political scientist and weekend trips to sites of historical and cultural significance.

### A transforming experience

Their experiences in Uganda have already had an effect on the doctors and students. For the students, it has confirmed or altered their career choices—all three medical students have chosen to specialize in internal medicine—and their sense of what is important to learn. And residents find themselves taking a different approach to medicine.

"I think my physical exam skills went through the roof," said Joshi, the third-year resident, a few weeks after his return to Connecticut. "My ordering of tests has probably gone down by 40 percent. If I get this test, X-ray or CT scan—which is hard to come by in Mulago—is it going to give me some new insight that I can't get by putting my stethoscope on the patient's chest?"

And it's not just students and residents starting out in their careers who are affected by the experience. "What does it really mean to be an effective clinician?" asked Mercedes Villanueva, M.D., an infectious disease specialist at Yale-affiliated Waterbury Hospital who spent three weeks at Mulago. In October she addressed a reception to open an exhibit of photographs and essays about Uganda. "From where does a clinician's power ultimately derive? Clearly, we rely on our technical expertise, our knowledge of pathophysiology, our ability to use evidence to make diagnoses and formulate treatment plans. ... But beyond this, I believe our power derives from our ability to listen, examine carefully, synthesize data and draw on our previous experiences."

For Sadigh it's not enough that Yale students, residents and attendings learn how to practice medicine with limited resources. He also wants to purge them of prejudices or paternalism. "We shouldn't be making judgments about a community that is overwhelmed at every level," he says. He expects that the young Yale doctors will learn from the experience, and he acknowledges the difficulties they face—linguistic and cultural barriers as well as patients who have no money for medicines or no one to fetch them a glass of water.

"It is a kind of shock therapy," says Mulago's Opio. "Most people do not know what happens in the developing world. ... Many of them are going to become great people in their lifetimes, but I think their experience here will make them better people."

That is also the hope that drives Sadigh.

"At the end of the trip they will be different people," he says. "I can't measure that, but I think they will be different people. ... If they become better people, in the future I think Uganda is going to gain a lot from this. That is a long-term investment."

John Curtis is the managing editor of *Yale Medicine*.

## Uganda clerkships inaugurate a new foreign electives program

After six weeks in Uganda last summer, fourth-year medical students Allison Arwady, Lily Horng and Rachel Laff said the clinical rotation at Mulago Hospital was the best they'd had in medical school. The three were the first students to travel abroad with support from three new fellowships endowed by alumni donations. The fellowships marked the beginning of an ambitious program to support international clerkships for students.

"This is different from anything that has ever happened before," said Nancy R. Angoff, M.P.H. '81, M.D. '90, HS '93, associate dean for student affairs. Students have long traveled abroad for clerkships,

but at their own expense. For the first time, the medical school is offering financial support. Angoff believes the experience in a foreign hospital will have a lasting and positive influence on the students' development as doctors.

Arwady, Horng and Laff joined an existing medical exchange led by Majid Sadigh, M.D., associate professor of medicine. This was the first time that the exchange, which has brought Yale residents to Uganda since the summer of 2006, hosted medical students.

"It was hard," said Arwady, who had previously been in South Africa and Botswana, working on projects as a medical student. "It was also one of the most intense and thought-provoking experiences I have had in years.

You are out of your comfort zone in every way."

"I learned a lot, thanks to the residents and most of all to Dr. Sadigh," said Laff, who had previously spent three months in Gabon. She said her time in Uganda reinforced her decision to pursue internal medicine. "I want that broad training," she said.

"It was the best rotation I've had, hands down," said Horng, who had previously traveled to China and Chile.

On Mulago's wards they saw the limitations of medicine in a developing country and marveled at the skills and knowledge of their Ugandan colleagues. They came away with a heightened appreciation of the importance of the physical exam, which they saw their Ugandan and Yale colleagues relying on for diagnoses. "It's something that we don't do that well here," said Arwady.

Also in Uganda was Matthew S. Cook, PA '07, then in his final year of the Physician Associate Program, which provided partial support for his rotation. Like the medical students, he said his experience in Uganda left a lasting impression. "I definitely have a commitment to do medicine overseas," he said. Cook began a two-week rotation on the Community Health Care Van on his return to New Haven. Coming on the heels of his Uganda clerkship, the van rotation made him more aware of health disparities in this country. "The health care system is broken and flawed. The problems are so widespread there is no easy fix," said Cook, who is now on the hospitalist service at Yale-New Haven Hospital.

Robert M. Rohrbaugh, M.D., associate professor of psychiatry, and administrator for the clinical elective program that has brought foreign students to Yale for electives, said the success of the Ugandan program bodes well for future foreign electives.

"Despite the difficulties that everyone that goes there encounters, it was confirmatory for them that this is what they want to do," he said.

Foreign electives will be open to students who have completed their third year. In addition to the six-week clerkships, students can apply for the year-long Yale-China Medical English Fellows Program. Nancy Chapman, executive director of the Yale-China Association, said the fellows going to China would teach medical English and study Mandarin, the official modern spoken language of China. They would also have clinical and research opportunities. The association will pay travel expenses and provide a stipend and housing at the Xiangya School of Medicine in Changsha, Hunan.

Wherever they go, students would be expected to learn about the host country and learn something of the language. "They have to be prepared," Angoff said. "They will also have an opportunity to debrief afterwards, as these experiences can be emotionally charged."

Rohrbaugh said students will benefit in several ways. "They'll be able to practice what they've learned at Yale in different settings. They'll be seeing patients with different presentations of illness. They'll develop an awareness of the social and political factors in health and disease," he said. "There is a basic cultural competency that you learn."

—John Curtis



A podcast of Robert Rohrbaugh speaking on this subject can be found on the Yale page on iTunes U. Visit [itunes.yale.edu](https://itunes.yale.edu) or launch iTunes, then select Yale from the offerings under iTunes U. The podcast is included under "Yale Health and Medicine."

