

A life's work in Indonesia

Kinari Webb came to medical school knowing how and where she wanted to practice medicine. Now, she and her ecologist husband are working to bring health care to a remote corner of Borneo while preserving the rain forest.

By [Jill Max](#)

Pak Rudi, a 40-year-old from a remote corner of the island of Borneo, Indonesia, was in bad shape. Walking even a few steps left him short of breath. In the fall of 2007, with his wife and several family members, he traveled for eight hours by motorboat and motorcycle taxi to reach the coastal town of Sukadana, where he had relatives who urged him to seek help at the local clinic. By the time his family carried him into the Alam Sehat Lestari clinic, known as ASRI, Pak Rudi was close to death. Although the clinic lacks an X-ray machine, the medical staff diagnosed Pak Rudi based on a physical exam and the medical history he and his family provided. Dilated cardiomyopathy due to a viral infection a decade earlier was causing his heart to fill almost his entire chest cavity—it was only later, after the doctors saw an old X-ray, that they realized how swollen the heart had been.

In Indonesia, which has 16 physicians per 100,000 people, 12 times lower than the ratio in the United States, medical care is a scarce commodity. In rural areas, the ratio is even worse: where Pak Rudi lived—in West Kalimantan—three clinics and 60,000 residents shared one doctor. That changed when ASRI opened in June 2007 as the newest clinic in the



Kinari Webb, a 2002 graduate of the School of Medicine, visits with a family in the town of Sukadana in a remote corner of the Indonesian island of Borneo. Webb has opened a clinic that serves the local population. Webb and her husband are also working to preserve the rain forest of nearby Gunung Palung National Park. (Photo by Erick Danzer)



area. A small house with three exam rooms and a lab for basic tests, the clinic is run by Kinari Webb, M.D. '02, who also led Pak Rudi's medical team.

"I figure there are not very many humans on the planet who are crazy enough to do something like this," says Webb, who spent a decade preparing to open her clinic in the rain forest. "Something like this" refers to her dual dreams of bringing health care to Borneo and promoting forest conservation. It's no accident that her clinic is next to Gunung Palung National Park—558 square miles of forest, swamps and mountains that contain 5,000 species of trees, wild orangutans, sun bears, agile gibbons, proboscis monkeys, wild boars and hundreds of bird species. This pristine habitat is in danger from logging companies and poachers who eke out a living by harvesting lumber. In the 1960s, rain forest covered 82 percent of Indonesia—now it covers 49 percent. Since the 1980s more than half the rain forest in Borneo, one of the largest of Indonesia's 17,500 islands, has been destroyed.

Webb first visited the island as an undergraduate at Reed College in Portland, Ore., and was both entranced by the beauty of Gunung Palung, with its mangrove forests and verdant mountains shrouded in gentle mists, and horrified by the extent of the region's illegal logging. While the government has tried to protect the rain forests through mass tree plantings and international carbon-trading schemes, villagers have few ways to earn a living. Some work on rubber and oil palm farms. Others earn a few dollars a week breaking boulders and selling the rocks to road-building crews. More than 7 percent of the former Dutch colony's 245 million people live on less than a dollar a day. In ASRI's catchment area, many households survive on about \$15 a month, and for many families, a shared weekly egg is the sole source of protein. Tree poaching, although it pays less than \$2 a day, remains an attractive option.

A life-changing experience

In a sense, Webb's journey to Indonesia began during her childhood in Dixon, N.M., a small town about an hour from Santa Fe. Her parents, both of whom have Ph.D.s in

psychology, were hippies who had joined the back-to-the-land movement and taught Webb and her sister a love of animals and nature. Webb majored in biology at Reed, where she focused on orangutans. She pursued her studies with a determination that would serve her well later: she went to the library, looked up articles on orangutans and asked every author for a job. In 1993, between her junior and senior years, she worked at a research station in Gunung Palung National Park, one of the world's few remaining orangutan habitats.

One day a research assistant approached her with a cut on the palm of his hand, and although the wound was not serious, he acted as if it were life-threatening. It dawned on Webb that for people living in remote areas a seemingly routine injury could have dire consequences. Since she had no medical training, Webb whipped out her copy of the health care manual *Where There Is No Doctor*, by David Werner, cleaned the cut and closed it with improvised butterfly bandages made of adhesive tape. The cut healed and Webb was hooked; she knew that she wanted to become a physician and that she wanted to help people in rural Indonesia.

Her experience at Gunung Palung was life-changing for other reasons as well. She met Campbell Webb, Ph.D., a biologist and ecologist who was pursuing his doctorate at Harvard. At first they resisted romance in an isolated setting under the scrutiny of their colleagues. But candlelit dinners (there was no electricity), bathing in waterfalls (there was no plumbing) and two months alone at their camp weakened their resolve. They were married as soon as Kinari graduated from Reed.

In Gunung Palung the idea of the interconnectedness of living things took hold in Kinari Webb's mind. For several species of trees, for example, propagation depends on orangutans that eat their fruit and defecate the seeds. On a more global level, Webb realized that timbering not only reduced rainfall and lengthened the dry season, but also contributed to global warming. Webb decided to focus her energy on a new project: she would provide health care to a population in desperate need, but she would also use it as an

incentive for villagers to stop cutting down trees.

A decade of preparation

More than 10 years passed before she could bring her vision to life. During that time she laid the groundwork for ASRI, whose name means “beautiful and harmoniously balanced.” She came to Yale knowing exactly where she wanted to practice medicine. When it was time to apply for her residency, Webb looked for a family medicine program that would provide the best training for practicing medicine in a developing nation. At Contra Costa Regional Medical Center in Martinez, Calif., she delivered more than 250 babies and performed enough C-sections to qualify for privileges at any hospital in the United States. “She got this incredible preparation to be out in the middle of nowhere and be the first person to do whatever has to be done,” said Nancy R. Angoff, M.P.H. '81, M.D. '90, HS '93, associate dean for student affairs.

In early 2005, just before completing her residency, Webb returned to Indonesia to help in the aftermath of the tsunami that devastated coastal areas of more than a dozen countries on the Indian Ocean in December 2004. She was distressed to see that the efforts of many of the agencies and organizations were ineffective and little of the aid was reaching those who needed it most. This only fueled her determination to open her own clinic. After her residency, she set up Health in Harmony (healthinharmony.org), a nonprofit organization to manage fundraising. Cam Webb moved to Bogor, West Java, which his wife used as a base while she searched for a location that was both close to a rain forest and in an area with few health care resources. “The whole process was like stepping off a cliff,” she said.

After almost a year of searching, Kinari Webb realized that Sukadana, just outside Gunung Palung, was the perfect spot. It's two airplane flights and a two-hour drive through mangrove swamps from Jakarta, Indonesia's capital. The heart of the park's forest is still uncut, so there is conservation work to be done, and the local population has unmet medical needs. The location also worked for Cam Webb, who got a job

as a senior research scientist with Harvard and is working with the Center for Tropical Forest Science, the world's largest tropical forest research program. His work takes him from his home base in Sukadana to his office in Bogor, and to sites throughout Indonesia and Malaysia where he does research in plant biodiversity and teaches a Harvard field course on Bornean ecology.

Before she set up shop, Webb recruited college and medical school classmates to help raise start-up money through a combination of Indonesian and American grants and private donations. Despite support from the Indonesian government, Webb faced innumerable delays in securing permits to open her clinic. Every time she produced a document, bureaucrats demanded yet another. Even worse, officials had their hands out for bribes, which she refused to give.

On June 12, 2007, ASRI opened its doors. A five-minute walk from an undeveloped beach, ASRI is on the outskirts of Sukadana (population 12,000), a sleepy town with a pungent fish market and several stores packed with flip-flops, rattan baskets and plastic buckets. A forest stretches up the hills surrounding the village, and gibbons can be heard calling through the trees. Orange with a bright blue roof, the six-room clinic is surrounded by houses, rice fields and gardens. It has three exam rooms, a dental exam room and a room for patients to sleep overnight, plus a lab for malaria and TB smears, blood work and urinalysis. There is a small pharmacy with a refrigerator, but Webb would like to have a solar-powered model since the electricity blacks out as often as five times a day. When that happens Webb lights candles, and if an emergency requires electricity she turns on a generator. She would like to add an X-ray machine to the ultrasound, EKG machine and other equipment on hand.

The staff of 15 includes two Indonesian doctors, a dentist, three nurses, a pharmacy assistant, a conservation director and an organic farm manager. "Kinari has surrounded herself with a system that can support this project and she's sort of the spark in the middle, the lifeblood of the project," said

Roger Barrow, M.D., associate clinical professor of family medicine at the University of California, Davis, who worked with Webb in the aftermath of the tsunami and visited ASRI in April 2007.

“What they were able to accomplish in four months is almost impossible to imagine in a country that moves that slowly,” said Jeremy Sussman, M.D., who spent a few weeks at ASRI in November 2007 as part of the Johnson & Johnson Physician Scholars in International Health Program at Yale, which sends residents to underserved areas around the world. Webb appreciates the opportunity to tap into the expertise of volunteers like Sussman. “It’s good for my doctors to have someone else teaching them besides me,” she said. “It helps to have a wider variety of opinions and ways of doing medicine.”

The clinic is already bursting at the seams—ASRI treated 3,000 patients in its first nine months and is booked three weeks in advance. Webb has started to think about a new building and plans to open a hospital. The nearest hospital is two hours away and anything more than minor surgery requires a seven-hour journey to Pontianak, the regional capital.

Because her resources are limited, Webb finds innovative ways to treat her patients, some of which she has picked up from visitors like Werner. Webb has used honey to treat a diabetic ulcer on a hand, fashioned cardboard shoe inserts for a boy who had trouble walking, and used mucuna beans from the clinic’s organic garden (they have a high concentration of L-dopa, which increases dopamine levels) to treat Parkinson disease. She and her staff treated Pak Rudi with aspirin, diuretics and blood pressure medications. In June 2008, Webb learned that Pak Rudi had died; he went off his medicines for a month, in part because of the difficulties of transportation from his village.

Patients with cancer, diabetes, high blood pressure, severe diarrhea and a variety of other ills come to ASRI, but the area’s biggest health problem is tuberculosis. More than 20 percent of the local population has TB, Webb estimates, and she has trained and hired workers to institute a Directly

Observed Therapy program, in which they visit patients to monitor them while they take their medications.

Poverty plays a major role in many of the diseases Webb treats and is also a barrier in receiving treatment, but Webb doesn't believe in free health care. "It's reasonable that you pay for it, but it's also reasonable that you pay for it in a way you can actually afford," she said. "It gives patients dignity." That's why health care credits are a key component of her program. Patients and their families can pay for their treatment by cleaning the clinic, doing laundry, washing equipment or providing manure for the organic garden. They can also undertake conservation work, as Pak Rudi's family did. During the month he spent recuperating at a nearby relative's house, his family worked in the organic garden next door to the clinic. Area villagers are learning organic farming, and vegetables from the garden feed the clinic staff and patients. Webb expects to have produce to sell in the local market to help pay for medicine and other supplies.

Linking health care to ecology

Getting the local population to understand why they should worry about the environment pervades almost everything Webb does. When asked why she and her colleagues bicycle instead of driving to the clinic, she says, "Because biking is healthier, cheaper and better for the environment." The clinic's staff held a series of meetings in villages surrounding Gunung Palung to discuss the connection between health and the environment and identify incentives that would motivate the villagers to protect the park from logging. It is here that Webb's effervescent yet soft-spoken demeanor works its charm. Indonesia is the largest Muslim nation in the world, but in West Kalimantan there are no restrictions on women's social liberties, and she engages villagers in lively discussions. ASRI's staff and local residents came up with a plan: communities would work toward a "green" conservation status, meaning no illegal logging in the previous month. In return, they receive one month of free ambulance service, mobile clinic visits and clinic discounts. No one is ever denied health care, but Webb would like to

provide incentives for the long-term health of both the community and the environment. “We don’t know yet whether the incentive is strong enough on an individual level or on a community level for people to actually change their behaviors,” said Cam Webb, “but even if it doesn’t work we’re doing a lot of education. If we get even a portion of forest restored, then it’s having a positive effect.”

Although the program is still in its infancy, its reputation is spreading. The managers of an elephant conservation project on the Indonesian island of Sumatra have approached Webb about replicating the ASRI model. She hopes that other organizations around the world will also recognize its potential. Meanwhile, each day brings satisfaction that her vision is working. “I’m feeling kind of like a parent whose child has just started to toddle around,” she said.

At the end of a long day treating patients, Webb will sometimes provide an evening meal to village children who stop by her thatched-roof house. Many of their neighbors consider the Webbs’ house, with its cement floor and no plumbing, quite modest, but the couple finds it charming. A pump from their well fills a water tank on a hill that drains to a sink and they use a squat toilet which they flush with water from a bucket.

When Cam Webb is home, the two often paddle their dugout canoe to a small island, where they watch the sunset or go for a swim. When she’s on her own, Kinari writes thank-you notes to donors and answers e-mail before falling into bed, where she may be awakened by a raucous serenade from gibbons camped out in the trees behind her house.

If she had any doubts about the course her life was taking, a recent boat ride into the park, where miles of grassland have replaced the once-majestic forests, convinced her that this is exactly where she wants to be and where her future lies. She plans on spending the next few decades in this remote corner of the world, but her patients hope the clinic will be around even longer, so that they won’t have to worry whether a simple cut on the hand might end in tragedy. As one village leader put it, “We hope that ASRI will be forever and ever.” **YM**

