

# *Flight* *for* **Sight**

IU professor travels on world's only flying eye hospital to help train other doctors in developing countries

By Dawn Reiss

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**H**eat hangs in the air like a smothering blanket. It is hours before noon, but the tarmac is already starting to sizzle at Phnom Penh airport. Five-year-old Thai Phok Phorng and his mother arrive early in a white van with a few other parents and children. Sporting Mickey Mouse pants and a plaid shirt, Phorng and his mother make their way past a field of billowing green lotus toward the ORBIS flying eye hospital. Awe-struck, Phorng quietly observes everything. This is the first plane he's ever seen.

**I**t was just yesterday that Phorng and his mother waited for hours with hundreds of other hopeful Cambodians to be examined at a local hospital called Preah Ang Duong. Many traveled hundreds of miles to see if their eye problems could be fixed. Fewer than 25 were chosen for surgery. Young and old, the prospective patients showed up as a sea of colorful Westernized shirts and pensive faces. Mothers clung to their babies whose eyes bulged from tumors. Children and adults came with cataracts, glaucoma, and other retinal problems. Some were victims of land mines or had more unusual problems, including a Buddhist monk who lost his sight and was in constant pain after an insect flew into his eye and scarred his cornea. One girl developed an infection after a cow's horn pierced her eye during a day in the rice fields.

Today, inside the plane, is a well-orchestrated dance. A narrow corridor next to a bank of windows provides a hallway for patients and medical staff who move between one room and the next. The retrofitted DC-10, the only one of its kind in the world, is self-sufficient with machines to purify the water and air. Seats have been removed to create examination, operating, and recovery rooms, along with a lecture area in the front of the plane complete with a drop-down screen behind the cockpit.

As Phorng walks through the plane, he tries to capture each new moment. Once prepped for surgery, he begins giggling uncontrollably. He plays with a stuffed koala bear.

Nearby, Dan Neely, an associate professor and pediatric ophthalmologist at the IU School of Medicine, is preparing for Phorng's operation, where he will help straighten his outwardly drifting eyes. While Neely has done this surgery hundreds of times, the situation is far from typical. He is the conductor in this operating room, and this is his show. While directing a staff he's never worked with before, Neely must maintain a running commentary and field questions from more than 30 doctors from Cambodia, Laos, and Myanmar (formerly Burma), who are sitting at the front of the plane, watching Phorng's surgery on a large screen.

"When I first started," says Neely, "it was a little intimidating."

Maybe so, but this is Neely's fifth trip with ORBIS, a New York-based not-for-profit that focuses on preventing blindness by training medical experts in developing countries.

Despite experiencing jet lag after arriving two days earlier on a 30-hour flight from Indianapolis via Tokyo and Bangkok and a 6

a.m. start today, Neely jokes that he is just glad to be here, helping others and escaping the Midwest's cold December weather.

### *A Clear Difference*

**I**n addition to land-based programs, the ORBIS flying eye hospital stops, on average, in six to 10 developing countries each year for two-week-long programs like this one in Cambodia. A permanent international "plane crew" of 17 includes ophthalmologists, nurses, an anesthesiologist, and flight mechanics, who are assisted by a visiting rotation of international nurses and doctors to supplement the destination's permanent staff. To date, ORBIS has carried out more than 900 programs in 86 countries to directly treat more than 4.4 million people for blindness-related diseases.

It's a relationship that Neely's mentor, Gene Helveston, a former IU professor of ophthalmology, fostered many years ago when Neely came to Indianapolis for an IU fellowship in pediatric ophthalmology.

"It was one of the top three pediatric fellowships in the country with Dr. Helveston and Dr. [Forrest] Ellis [BA'54, MD'57]," says Neely, an Ohio State graduate who did his medical residency at IU. "The two of them were like the godfathers of pediatric ophthalmology."

Despite growing up in a family of optometrists – his father, uncle, and eventually his sister went into the field – Neely was unsure at first if this was the right career path for him.

A native of Claiborne, Ohio, Neely, 41, was always drawn to the natural sciences but thought being a veterinarian might be a better fit. As he rotated through subspecialties in medical school, he began to think seriously about becoming an ophthalmologist.

"You have healthy patients, they are very grateful patients, because they have a problem that is fixable," Neely says. "There's not a lot of emergencies, not a lot of weekend work, and a good mix of surgery and clinic time."

After working with Helveston, one of the first pediatric ophthalmologists in the country, Neely was hooked.

"Dr. Helveston is a fireball, a man of passion and energy, who not only approaches things with his positive attitude, but also is able to try new things and stick it out even if it's not perfect the first time," says Neely, a father of three. "If it doesn't work well, he's willing to admit that it was a bad idea."





Dr. Phara Khauv examines a potential patient for the ORBIS International flying eye hospital program in Cambodia.

Helveston, founding director of the pediatric ophthalmology program at the IU School of Medicine, started taking international trips with ORBIS in 1985 and then developed, on his own, a telemedicine consultation program called Cyber-Sight in 1998. The idea is simple, but the effect is profound: give a doctor in a developing country a computer, digital camera, and Internet access so he or she can e-mail photos and questions about patients to doctors around the world who can mentor them free of charge.

"It's about paying back society," says Helveston, who now works as ORBIS's chief ophthalmologist and medical director of Cyber-Sight. "You like to be able to give to somebody who needs it. I've gotten more out of it than I've given."

The Cyber-Sight program, which ORBIS adopted in 2002, now has 140 physicians involved with more than 600 partner doctors in 50 countries.

"With a very simple investment you can provide ongoing consultation forever," adds Neely. "While I may physically treat eight

kids this week, when I go home I can help so many more by becoming established telemedicine partners with local doctors. We could see hundreds of kids over the next couple of years. That's really where you get a big return."

### Medical Connections

Cyber-Sight connected Neely and 30-year-old Cambodian doctor Phara Khauv, the lone ophthalmologist at Angkor Hospital for Children in Siem Reap. For doctors like Khauv, working under difficult circumstances, Cyber-Sight is the best way to connect with other medical professionals.

Neely and Khauv first met in 2002 and then again in 2004 in Hanoi, Vietnam. Khauv, then a resident at the Vietnam Institute of National Ophthalmology, attended seminars when Neely was visiting, teaching at one of ORBIS's 65 short-term annual hospital-based international training programs. Inundated with many



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students, they didn't have a lot of time for interaction. A local Vietnamese ophthalmologist familiar with Cyber-Sight convinced Khauv four years ago to become the first to use the program in Cambodia. Since then, Neely has helped Khauv with more than 30 surgeries, and he frequently answers questions and gives suggestions.

"The doctors are just as desperate for help as the patients," Neely says. "They know they have limitations. They want to learn as much as possible."

Unlike some of its Asian neighbors, Cambodia has a severe shortage of ophthalmologists. According to the Cambodian Ministry of Health, there are only eight active ophthalmologists and 40 eye doctors in Cambodia.

The shortage is the product of Cambodia's long struggle for peace. The United States bombed Cambodia in the 1960s and '70s to stop supply routes used by the Viet Cong, and consequently strengthened the dormant Cambodian Communist organization, the Khmer Rouge. The Khmer Rouge, led by Pol Pot in the 1970s, killed an estimated 1.7 million Cambodians, mostly intellectuals — doctors, lawyers, journalists, or anyone wearing glasses who "looked smart."

Khauv, the ninth of 10 children whose parents sold silk in a Phnom Penh market, lived through the genocide and the loss of two siblings. His parents only had money for Khauv and his younger brother to go to college, and he became an ophthalmologist.

Being mentored by Neely, he says, "is a dream."

Neely says that's why volunteering like this is so important, to teach others who can help make a difference.

Each month Khauv typically performs 300 eye-disease outpatient consultations and operates on 20 or so patients. He doesn't have access to the medical books, supplies, or staff that American doctors

consider standard. Unlike most of his counterparts, he has surgical loupes, optical glasses that magnify a patient's eye during a doctor's examination, that the Rotary Club donated. One pad is missing and parts are rubber-banded together, but at least he has them.

Cambodia is a country in which most people, if they have the means, take an hour flight to Bangkok for any major medical problems. As a result, Khauv sees many patients from around Cambodia who don't have access to well-trained eye doctors or ophthalmologists in their area. Many travel six hours on a bumpy bus along two-lane narrow roads. They are frequently slowed down by farmers and slow-moving vehicles between Phnom Penh and Siem Reap, a city that is best known for the nearby breathtaking Angkor temples complex that spans across a region more than double the size of Manhattan.

Still, being so isolated and far from Phnom Penh, Cambodia's capital, means Khauv relies heavily on Cyber-Sight for any interaction with other doctors and ophthalmologists.

"I use it every week," says Khauv, who has been granted a FedEx Fellowship to train with Neely from May 1 to July 31 at the IU School of Medicine's ophthalmology department in Indianapolis. "It is very difficult to work here [in Cambodia], because I don't have anyone to ask for advice. Having the program has made a huge difference."

### *The Least I Could Do*

Now, after years of discussing via Cyber-Sight, Neely and Khauv are onboard the ORBIS flying eye hospital, ready to operate together for the first time. Their first patient is 5-year-old Phorn, a patient Neely and Khauv have discussed on Cyber-Sight for several weeks. Neely is eager to see everything come "full circle."

Neely waves a blue beanie bear in the air for Phorn to look at as he peers into his eyes. Much to Neely's delight, the diagnosis he gave over Cyber-Sight just a few weeks earlier is the same conclusion he reaches after examining the boy in person.

Neely's hands work fast, stitching and slicing, pulling and tugging. Khauv joins in, as Neely comments. There's blood while the eyeball rolls in its socket. For those with weaker stomachs, it is difficult to watch. Patient and precise, Neely finishes after nearly two hours, and Phorn is doing well after surgery. The process is slower than usual so that the observers can be trained.

That's the whole point, Neely says.

"These people are hungry for knowledge, for resources, and are all very appreciative of what is being done," he says. "They are facing a tall task. This is the very least that I could do." ■



**Dr. Dan Neely waves a beanie bear in front of 5-year-old Thai Phok Phorn during an examination in Cambodia.**

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