



Crossing to Safety

1.2 million people die in traffic crashes every year—most in developing countries. What’s the solution?

Story and Photography by Cathy Shufro

When we arrive at Doan Dung's mud-and-bamboo house in the rural outskirts of Hanoi, Vietnam, she immediately takes us to her husband's shrine—a carved wooden shelf that hangs about six feet above the floor.

It holds two blue-and-white ceramic pots with incense sticks, a small oil lamp and a row of three celadon-green rice wine cups. Doan places the offerings we've brought in front of the photograph of her husband, who died at age 35 while riding his motorbike to work. His face is serious, his dark eyes mild. Doan leaves my interpreter and me alone in the room. She is giving us a moment to pray.

Doan got the phone call on a September morning in 2008, soon after her husband, Duong

Thu, had left for his [BACK TO TOP](#)
construction job at a new
factory complex. The caller had
taken the same popular shortcut
to work that Duong used, a dirt
path that cut the trip to the
construction site from eight
kilometers to three. The path
traversed a railroad crossing
without a barrier or warning
lights, and a train had struck
Duong. It also killed his
passenger, a 53-year-old cousin.
Later that morning, Duong's
father, a farmer and wounded
veteran of the Laotian civil war,
went to the tracks to pick up his
oldest child's body. He keeps his
son's motorcycle helmet as a
memento.



The Pain of Loss: Doan Dung lost her husband in a motorbike crash at a railroad crossing when he was

35.

The railroad company gave the family \$100. Duong's father told us that no barriers have been added at the crossing, and people keep dying there. He hasn't kept count.

Duong's widow struggles to support her two sons, now 10 and 17. She earns \$137 per month sewing shoes at Thuong Dinh Footwear nine hours a day, with two Sundays off each month. During the growing season, she works in her rice field for a few hours before or after work.

Her workplace stands within the industrial complex that Doan's husband helped to build. Doan splits the cost of gas to get there with the daughter of the man who died alongside her husband. Every morning, the two women ride together by motorbike to the factory.

They take the long way.

THE MAGNITUDE MADE CLEAR

Two people die on the roads each minute worldwide, 1.24 million people each year. Without interventions, annual deaths on the roads are predicted to surge to 1.9 million by 2020. Globally, traffic injuries are the leading cause of death for people ages 15 to 29.

Yet, deaths and injuries on the roads are so common, so routine, that many find them barely worth mentioning. The Ebola epidemic captured worldwide attention for nearly a year and killed 11,000 people. Meanwhile, 100,000 people died on the roads *each month*—equivalent to the death toll of nine Airbus passenger jets crashing each day.

The magnitude of loss was made clear in 2009, says Professor

[Adnan Hyder](#), MD, PhD '98, MPH '93. That year, WHO issued the first Global Status Report on Road Safety; it would publish another in 2013. “Those reports truly changed the face of road safety, because we now had concrete numbers,” says Hyder, who founded and directs the Bloomberg School’s [International Injury Research Unit](#), a WHO Collaborating Center. “Many people didn’t know that roads kill the same number of people—or more—than diseases like malaria or tuberculosis or HIV/AIDS. People were astounded.”

Now road safety is having its day—or, rather, its decade. The UN proclaimed that 2011 would begin “a decade of action for road safety.” In addition, road safety advocates have gotten “very lucky,” says Hyder, because Bloomberg Philanthropies has chosen

traffic safety as a major focus for its efforts. The New York-based philanthropy, funded by former New York City Mayor and School benefactor Michael R. Bloomberg, sponsors programs that save lives by investing in public health problems for which there are effective interventions. In 2007, it began a pilot traffic safety program in Cambodia, Mexico and Vietnam. Then, in 2009, it committed \$125 million to fund the Global Road Safety Program.

The program reached out to low- and middle-income countries—where help is most needed. Even though these countries have only 52 percent of the world's registered motor vehicles, they record more than 90 percent of traffic deaths. The first phase of the Global Road Safety Program supported projects in 10 low- and middle-income countries including

Brazil, China, India, Kenya and Vietnam. Deaths in the countries chosen accounted for nearly half of all road traffic fatalities globally.



Unprotected: Adults and children alike ride without helmets in Ninh Binh Province, south of Hanoi.

Now, in the grant's second phase, the focus has largely shifted to cities, which can move more quickly than national governments. This phase includes megacities like Shanghai (population 24 million) and Mumbai (12 million), middle-sized cities such as Ho Chi Minh City (8 million) and smaller ones like Addis Ababa, Ethiopia (3 million). The program will train

police how to enforce traffic rules safely and help create media campaigns to promote the safety strategies that cities choose. It will also support three full-time staff experts to work with each city and with international partners on road safety interventions.

Gayle Di Pietro, MEd, program manager for the Global Road Safety Partnership (an international nonprofit organization), believes success in a major city can drive change nationwide. “If we get this right in Mumbai, other Indian cities will follow, and we will end up with a much quicker roll-out of the good practice initiatives that save lives,” she says.

“Every life lost because of unsafe roads is a tragedy—and most of those tragedies could be avoided with better rules, better enforcement and smarter

infrastructure,” said Mayor Bloomberg when he promised a second \$125 million grant to the Global Road Safety Program in 2014.

The “better rules” have grown out of experience in affluent countries. They mean “getting helmets on heads, speed reductions, reducing drinking and driving, and ensuring people use seat-belts,” including child restraints, says Kelly Larson, MPH, lead for the Bloomberg Initiative for Global Road Safety. Seat belts, for example, cut serious and fatal injuries by 45 to 65 percent. Experience has also shown that rules will only stick if they’re accompanied by visible enforcement and social marketing campaigns.

The School’s International Injury Research Unit oversees monitoring and evaluation for

the Global Road Safety Program. School researchers work with governments on data collection and analysis, and then help them to answer the question, as Hyder puts it, “Are we investing in the right strategies to reduce deaths and injuries?”

Data show not only where a problem lies but also whether an intervention is working. For instance, in 2013, School researchers joined with Brazilian scientists to examine drinking and driving. After interviewing 800 drivers and examining police reports, the team concluded that 60 percent of drivers who told interviewers that they’d consumed alcohol before driving had evaded breath testing. A loophole in the law made it legal to refuse a sobriety test. By the time the study was wrapping up, Brazil had changed the law to make testing mandatory.

“We aren’t the researchers stuck in our white coats on the eighth floor of our building” in Baltimore, Hyder says. “We are at the table talking to mayors and policymakers. There really was nothing like this before in this field. This is going from program to policy in real time, and then it’s feeding back into policies and programs.”

Vietnam, with its growing economy and mobile population, provides a snapshot of the challenges and opportunities for the effort to reduce traffic’s global toll.

HELMETS ON HEADS, BUT...

In December 15, 2007, the streets and highways of Vietnam were transformed.

A new law took effect that day requiring adults on motorbikes to protect their heads. In a country where almost everyone

rides a motorbike (and most didn't wear helmets), Vietnam prepared for December 15 with a year of marketing combined with efforts to make safety-certified helmets easier for consumers to find. Helmets were also designed to be more comfortable; helmets with face shields had been nicknamed "rice cookers."

Nearly overnight, helmet-wearing shot up: In Da Nang province, for instance, it rose from 27 percent of drivers before the law to 99 percent six months later. In 2008 alone, national police reports showed a reduction of nearly 1,600 deaths and 2,500 injuries compared to the year before the law took effect—when 14,000 people had died from traffic injuries, and a half million had been hospitalized.

But while deaths on the roads

fell, the proportion of injured people with head trauma began to rise. Helmets typically reduce the risk of head injuries by 69 percent, yet Vietnam's Ministry of Health found that from 2010 to 2012, head trauma accounted for an increasing share of traffic injuries. The biggest jump was in 2012, when the proportion of head injuries rose to 22 percent.

“So what happened?” asks Pham V. Cuong, PhD, an investigator at the Hanoi School of Public Health and a Bloomberg School collaborator. For starters, a recent study showed that in Hanoi, one in four people on motorbikes have been wearing what Pham calls “paper helmets.” They look like plastic baseball caps, have no padding and provide no protection.

Even people wearing seemingly durable helmets might unknowingly lack protection.

“We have strict testing procedures, and the officials in Vietnam say those standards are even higher than in countries like Japan,” says Nguyen Phuong Nam, MPP, a WHO technical officer in Hanoi who works with the Global Road Safety Program. “So the issue is that producers will do everything to pass that test and get their certificate. Once they get that certificate, they will lower the quality of the product so as to reduce the cost and make a more affordable price to sell to the user.”

Vietnam’s Ministry of Science and Technology tested helmets that appeared to be high quality and found that only 40 percent were actually adequate. That was after excluding the obviously fake helmets. Nguyen suggests that the government randomly sample helmets every six months and prohibit street

sales of fake helmets.



Protected? A family of four rides helmetless through Hanoi traffic.

When I interviewed students heading home by motorbike from the Hanoi School of Public Health, several were wearing helmets without padding. They acknowledged that the helmets were useless.

One student pointed to a friend's bubble-gum-pink helmet and said, "The cap cannot protect her brain, but you can see it's colorful."

"They wear it for fashion," said another student, 21-year-old Le Coun, who wears a substantial helmet that his parents bought

him. “It’s easier to wear than my helmet.”

Student Pham Bich said he chose his flimsy helmet “because it’s beautiful.” When he pointed to the silver safety certification sticker, a friend interjected that everyone knows that certification stickers can be faked.

I heard again and again from motorbike riders that yes, people should wear helmets on long trips, but that short rides around the neighborhood pose no danger—partly because in-town speeds are kept low by crowding, but mainly because the trips are brief. An acquaintance in Hanoi assured me that the 3-kilometer motorbike trip to his son’s preschool is too short to worry about. But carrying his 2-year-old there and back six days a week adds up to roughly 1,900

kilometers—nearly 1,200 miles
—of unprotected travel each
year.

"Even months later, the last
thing he remembers before
hearing the ventilator was
eating hot-pot at a Hanoi
restaurant..."

In fact, most small children on
motorbikes ride without
protection. They stand in the
front between the driver's legs
or sandwiched between two
adults. And you'll occasionally
see a driver clutching an infant
with one hand and steering with
the other. Among school
children, a 2010 study in three
provinces found that even in the
province with the highest rates
of helmet use, six out of 10
primary school children rode

without helmets; in Hanoi and in the third province, eight out of 10 went without.

A major reason is cost; some families can't afford helmets. In response, Khuat Viet Hung, PhD, executive vice chairman of the government's National Traffic Safety Committee, has enlisted private companies ranging from a taxi service to an IT firm to hand out free helmets to children in rural areas. His agency arranges ceremonies that are hosted by celebrities and covered by the media. "Everybody cares about kids," he says. "And it advertises the company, too. Everybody's happy."

"DRINK-DRIVING"

Tran Hung knew he was in a hospital when he heard the "bit-bit-bit-bit" of the machine that was breathing for him.

Even months later, the last thing he remembers before hearing the ventilator was eating hot-pot at a Hanoi restaurant with three fellow graduates of the Banking Academy of Vietnam. When two new people arrived, they began the customary rounds of toasts, one drink for each person in the group, and then another round, and another. He estimates that the six friends drank two liters of *ruou*, rice wine similar to vodka.

It was three days later when the 26-year-old Tran regained consciousness and learned about the crash. Police told his mother that he'd driven his motorbike into the opposing lane and hit a motorbike driven by another man who'd also been drinking. That man was not seriously hurt, though his helmet shield shattered. Tran's helmet had no shield, and he

needed surgery for the many
broken bones in his face.

MORE THAN DEATHS

Deaths alone fail to measure the impact of the global toll of traffic crashes. Injuries are far more common, and their consequences extend beyond individual suffering to affect national economies.

Estimates of the number injured worldwide vary from 20 to 50 million people—mostly men in their prime working years. Many of those injured miss time from work, and the

most seriously injured face long recuperations, and sometimes lifelong disabilities. As they cope with damage ranging from amputations to brain injuries, they may need government support.

The cost of these injuries, more than \$500 billion, is like “losing an economy the size of Switzerland every year,” according to the International Federation of Red Cross and Red Crescent Societies. In low- and middle-income countries, the losses exceed the value of all

the
development
aid the
countries
receive.

Developed
countries have
made roads and
road users safer
partly because
they recognize
their economic
interest in
doing so, says
Gayle Di Pietro,
MEd, of the
Global Road
Safety
Partnership.
“They
understand
that you get a
return on your
investment in
road safety with
reduced health
costs, reduced
rehabilitation
costs, reduced
property-
damage costs,”
she says. »CS

The police showed him a

photograph of the two smashed motorcycles and the blood on the road. “When I saw that picture, I thought the people involved could not have survived,” says Tran, a broad-shouldered man with neatly trimmed hair. “I was saved by my helmet, and by luck.”

Tran missed two months of work at Sacombank. His parents paid the hospital fees of 100 million dong, about \$4,600; he gives them 20 percent of each paycheck. He still has 20 rivets in the bones of his face. He scrolls through photos on his phone to show one of himself from before the crash. Then he gestures toward small scars around his right eye. “I’m not handsome anymore,” Tran says.

Drinking and driving (or “drink-driving”) sits at or near the top of the list of concerns of the 10 cities chosen for the next five

years of the Global Road Safety Program, says Di Pietro of the Global Road Safety Partnership.

Enforcement is the key to addressing any change in behavior, from curtailing drinking and driving, to preventing professional drivers from overloading buses and trucks, says Khuat at Vietnam's National Traffic Safety Committee. "The function of enforcement is firstly to give a stick to someone who violates the law, to show the power of the government, and, secondly, to give the warning message to the society, to all traffic participants. And the third is education," says Khuat.

The government and WHO developed TV spots and radio shows on drink-driving and on helmet quality; a children's comic book on safety; and a billboard showing an unhappy-

looking man undergoing a roadside breath test. The Global Traffic Safety Program trained 1,000 police officers to set up sobriety checkpoints that both enforced the law and served to warn drivers.



Education and Enforcement: This billboard in northern Vietnam warns drivers that police will check for “drink-driving.”

Ending drunk driving will require a cultural shift in Vietnam, says WHO’s Nguyen. “People drink on all occasions: At weddings, when they have funerals, when they’re sad, when they’re happy—they drink. People say a man who doesn’t drink alcohol is like a flag without wind.”

But Nguyen does see the beginning of change: “Drink-driving was something no one was talking about five or six years ago, and there was no enforcement,” he says.

In her native Australia, Di Pietro has seen attitudes shift dramatically in the past 30 years. “Now you are seen as an absolute idiot if you drink and drive, when once you had ‘one for the road,’ ” she says. “Along with public shaming, the penalties for drinking and driving are huge fines, and you can even go to jail.”

Elsewhere in the world, where driving and drinking are still tolerated, she says, “We have to bring about that cultural change. It doesn’t need to take 30 years if you take the lessons learned from the Australian success. You will get a much more rapid culture shift.”

A BODY ON THE ROAD

Pham Cao was delivering medicine to his elderly mother early one July afternoon on a rural stretch of the Ho Chi Minh Highway when he rounded a curve on his motorbike and hit gravel. A tire burst, and Pham landed on the road. He was wearing a helmet.

He was lucky that afternoon: Two young men saw the crash, called an ambulance, and managed to control the bleeding in Pham's shattered right leg. But after a few days, infection set in, and his leg had to be amputated above the knee.



Recovery: Hitting gravel on a curve caused Pham Cao to crash his motorbike on a rural section of the Ho Chi Minh Highway.

When I meet him at northern Vietnam's trauma center, Viet Duc Hospital, the 57-year-old Pham lies on his back in his hospital bed, the bandaged stump of his leg visible. He is a soft-spoken man, a retired import-export official for the government. His chief worry seems to be how he will deliver medicine and check in on his mother and his aunt, both in their 90s. He hasn't yet told his mother that he lost his leg.

Pham is one of seven patients in a room meant for five; two gurneys parked between the rows of beds block the route to his bedside. The room remains nearly silent despite the presence of a visitor at nearly every bedside. The crowding is normal. Head nurse Bui Thi Kim Nhung, BSN, says that her floor usually has 75 to 90 patients but only 56 beds.

Despite seeing evidence of carnage on the roads every workday, Bui travels by motorbike. As she and colleagues catch up on handwritten patient notes at a long wooden table in the staff room, they agree that traffic in Vietnam is chaotic and frightening. Motorbike riders swarm the streets of Hanoi, rarely honoring traffic signals and often driving against the flow of traffic. At intersections, they merge into an undulating sea of other motorbikes, joined by bicycles, cars, electric bikes, pushcarts and pedestrians. People are forced to walk in the roadway because sidewalks are blocked by parked motorcycles and outdoor cafes. Many motorbike drivers steer with one hand, using the other to text, or to stabilize cargo. The worst I saw was a 4-foot-high sheet of mirrored glass propped between two men. Yet Bui's

colleague, orthopedic surgeon Tran Cuu Long Giang, MD, says he, too, rides a motorbike to work. “I have no money to buy a car,” he says.

My interpreter at the hospital is Vu Hong, BSN, who works with researcher Pham Cuong on a study of the socioeconomic consequences of injury in Vietnam. Before beginning MPH studies at the Hanoi School of Public Health, Vu worked for two years in this orthopedic trauma unit.

After our visit, we stop in a cafe for cold drinks to offset Hanoi’s 100-degree heat. In the midst of some small talk, Vu tells me that 10 days before, she learned on Facebook that a good friend had died on his motorbike. His name was Nguyen Than. Vu had met Nguyen in 2009, when they were university students volunteering at a school for

disabled children. He'd gone on to start two successful small businesses. "I feel bad, because he had a lot of potential," she says. His parents are farmers in their 60s, and Nguyen had been putting his younger sister through university. "Now how will they pay the fees?" asks Vu.

No one knows how he died. Vu heard that he was riding to Hanoi at night after visiting his parents in the countryside. Travelers found his body on the road.

"Everybody in Vietnam calls these accidents," Vu says quietly. "But in my opinion that is not correct. We could prevent road injuries. It's really possible."



CONNECTION



**SUSAN P.
BAKER**

Susan P. Baker, MPH '68, pioneered today's global emphasis on traffic safety, founding the Center for Injury Research and Policy in 1987. She championed federal regulation of the U.S. auto industry to improve crash safety and encourage seat belt and child carseat use.

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