On June 23, 1998, Michael Reich, vacationer, was driving with his family in a rented Toyota Tercel on a two-lane highway in the interior of the Dominican Republic when an on-coming intercity bus unaccountably crossed the median line and crashed into them head on. Reich’s eight-year-old son, Gabriel, was in the back seat and wasn’t scratched. His wife, Barbara, in the passenger seat, suffered a broken collarbone from the seat belt—they all were wearing seatbelts—and shards of glass cut her bare feet. Reich himself was broken and battered all up and down his left side and nearly died.

Reich (pronounced RISHE) was at the time and still is Takemi professor of international health policy at the Harvard School of Public Health. He had for decades been concerned professionally with health issues in developing countries, but he had overlooked what he now calls a “neglected epidemic”—road-trafﬁc injuries. On that Dominican road, the problem bore in on him with force.

Frantically, Barbara Reich wrapped her arms around her husband and whispered in his ear—to keep him, she says, on this side of the great divide. She screamed at the crowd that gathered from a nearby village and from stopped cars for someone to call a hospital, but got only blank stares. The bus quickly backed up and drove away.

Miraculously, then appeared by happenstance three members of the United States Air Force, two of them Dominican-born U.S. citizens trained as medics. Using a shoelace from Gabriel’s sneakers, they applied a tourniquet to Michael’s arm and took the Reiches in their van to a hospital 25 miles away in Santiago. They chose the hospital with care; it was clean and staﬁed by physicians who taught at the city’s private medical school. Barbara, an experienced hospice nurse, though herself battered, intervened forcefully to help manage Michael’s care, a critically important role, he believes, and one that she would continue to play. She successfully demanded that the surgeons treating her husband not use general anesthesia and give no blood transfusions. The public hospitals in the Dominican Republic are not known for high-quality care, says Reich, as he had discovered in his own study of failed eforts to reform the country’s healthcare system.

The surgeons stuck a two-inch bolt in Michael’s elbow, sewed up his face and scalp, repositioned his dislocated hip, and put a pin in his leg to try to stabilize the hip. They did good work. The Reiches returned to the United States the next day in a Lear jet equipped for medical emergencies, ﬁrst to a Miami hospital and then, after a battery of hugely costly tests and scans and treatment for a collapsed lung, to Boston for insertion of a plate and eight screws in the patient’s hip, for months of pain and mind-fogging pain medication, for a long, slow rehabilitation. And for reﬂection.

Globally, more than a million people die each year in road crashes, slaughter roughly equivalent to nine fully loaded Boeing 747s falling from the sky every day. Among young adults age 15 through 44, road-trafﬁc injuries
are the second leading cause of death—after AIDS.

Twenty million people around the world are injured or disabled each year by road-traffic injuries. These now rank ninth on the grisly list of leading causes of disability, but are projected to rise to third place by 2020 as the number of motor vehicles grows.

The epidemic is fiercest in developing countries. According to the World Health Organization, about 85 percent of all deaths globally due to traffic crashes and 90 percent of the disabilities caused by them happen in low- and middle-income countries. The poorest people in those countries are the hardest hit.

In the United States, people who die on the road are usually the drivers of automobiles. In the developing world, the most vulnerable, in order, are pedestrians; passengers on minibuses, buses, and trucks; and cyclists. They share the same road at the same time with cars, various motorized two- and three-wheeled rigs, and people riding or driving domestic animals. Such traffic-safety laws as exist may go unenforced because of a lack of police resources. Drivers' licenses and road-worthiness certificates may have been disbursed by corrupt officials paid little by the government because a second stream of income from bribery is presumed. In one paper, Reich and colleague Vinand Nantulya reported that the locals in Lagos, Nigeria, call their buses danfo (flying coffins) or molue (moving morgues). They know that taxis are safer, but who can afford them?

One reason people die on the road in developing countries the Reiches discovered firsthand. When they crashed, no one called 911. No ambulances came. In most of the world, there is no nearby health facility, and if there is one, it may lack the basics of injury treatment—dressings, antiseptics, anesthesia, oxygen. Care of the wounded may not come at all or not come quickly, and delay can be deadly.

Care may be unaffordable. Reich's treatment in that Santiago hospital cost $2,300, and he had to pay before leaving. It was a bargain, he figures, a tenth or less of what similar procedures would cost in

Michael Reich, director of the Center for Population and Development Studies. Physically well recovered from his near-fatal accident four years ago, he judges himself "no more disabled than a normal male over 50." But certain situations give him "a fair amount of fear in driving" and he has "a heightened sensitivity to walking across streets." Behind him is Eliot Street in Cambridge, at a spot where, two years ago, a Harvard student was hit by an automobile and killed.
the United States. (His two-day Miami hospital stay, no surgery involved, cost $22,000.) Still, many Dominicans could not have paid that bill. A study in Ghana showed that among patients with severe injuries, only 60 percent of those injured in cities and towns and 38 percent of those in the countryside got hospital care. The explanation most often given by people who did not seek care was that they hadn't the money for it.

Road traffic injuries constitute a public health crisis already, but, says Reich, public policy responses at the national and international level have been muted. Charles N. Mock is an orthopedic surgeon and epidemiologist at the University of Washington who has worked in operating rooms in Ghana, Mexico, and Vietnam repairing the damages done by crashes. “Two years ago,” says Reich, “he came to me to say that he could find no one in the international health community interested in the road traffic injury problem.”

Reich became director of the Center for Population and Development Studies in 2001. The School of Public Health is in Boston, housed in tall concrete and glass; the center is its outpost on Bow Street in Cambridge. In a green-and-tan frame house of Victorian mien, Reich means to foment creative debate about the critical issues of development, population, and health. To help shape and realize the center’s programs, he brought in Vinand Nantulya, now senior research scientist in international health, a Ugandan physician and former research immunologist who had turned to doing public health and come to the school in 2000 as a Takemi Fellow in International Health for a year of research work. Nantulya had examined road traffic injuries in Kenya.

The center has a rich agenda. With funding from the U.S. Agency for International Development, Nantulya and senior research scientist Edward Green, a Takemi Fellow in 2001-02, are trying to explain why it is that Uganda, among all of the African sub-Saharan countries, has been relatively successful in preventing new cases of AIDS. “The U.S. government’s solution to AIDS in Africa has been to give people condoms,” says Reich. “Somehow Ugandans have changed sexual behavior—delaying the age at which adolescents begin to be sexually active and reducing the number of sexual partners.” The center is also engaged in a major effort, funded by the Gates Foundation, to improve the control of schistosomiasis, a disease caused by a parasitic worm and a persistent cause of morbidity in Africa especially. “A mere 25 cents’ worth of medicine given to a child once every couple of years can greatly improve that child’s quality of life,” says Reich, “but even doing that on a regular basis has proved very difficult in many countries.” How to get good drugs to poor people in poor countries? One of Reich’s central concerns is health equity. Vehicular killing and maiming in developing countries is fueled by inequity.

Reich and Nantulya added to the center’s agenda the task of raising money to mount an international “Road Traffic Injuries and Health Equity Conference.” It happened in Cambridge last April 10-12, a collaborative production by the center and the World Health Organization/Geneva, the University of Washington’s Harborview Injury Prevention Research Center, the Centers for Disease Control’s National Center for Injury Prevention and Control, the Task Force for Child Survival and Development, and the Rockefeller Foundation.

Participants came from these organizations and others and from various posts in Colombia, Ghana, Kenya, Mexico, Mozambique, the People’s Republic of China, South Korea, Thailand, Trinidad and Tobago, Vietnam, and Zambia. They told of conditions in their countries, described initiatives taken, learned what had worked elsewhere, and tried to imagine whether or not speed bumps would be accepted back home, or whether their governments, too, could stop the sale of alcohol at bus and taxi stands, or whether one country’s way of reducing police corruption might be translatable. “We don’t all need to reinvent the wheel,” said Reich. “We need to know how to get the wheel onto our vehicle.”

Although what works in one place may not work in another, the efficacy of applying public health disciplines to the menace of the road has been proved triumphantly in the United States. “This is a car-stuffed country where the citizens are addicted to vehicles,” says Barry Bloom, dean of the School of Public
ON THE ROAD WITH DEATH (continued from page 50)

Health. “Yet road-traffic injuries and fatalities per passenger mile driven are down over the past three decades, and we are now at an historic low. In 2000 the fatality rate per 100 million vehicle miles of travel was 1.5. This achievement came after we realized that unnecessary death and injury could be addressed not just by a law-enforcement approach after the fact, but by public-health prevention strategies—defining the problem, identifying the risks, and designing and testing interventions. This was not done in one great stroke, but by a series of smaller interventions that made—and make—a difference. For example, cars have been re-engineered with impact-resistant bumpers, seat belts, air bags, and side lights, and with interior designs that make them safer. Roads have been better engineered and lit to make them safer. We have increased the speed of emergency responses to accidents and of ER trauma treatments to prevent death and serious disability. Seat-belt information campaigns and laws have been effective. Finally, the government keeps records on all fatal road-traffic injuries, which enables us to learn to do better. Ironically, the government does not keep records of people who die from gunshot.”

The coming-together for the international conference was unprecedented. The participants were “trying to start a social movement,” says Reich. “Those who came from developing countries have the power and position to effect change—we hope. We wanted to give them not just technical tools, but help in understanding some of the political dimensions of producing change.”

Reich has a Ph.D. in political science, most unusual equipment for someone in international public health. He earned it at Yale, where he preceded it with a master’s in East Asian studies and a bachelor’s degree in molecular biophysics and biochemistry, in 1974. At the School of Public Health, he teaches the “Ethical Basis of the Practice of Public Health” and the “Political Economy of International Health Policy.” “I try to get public-health professionals to understand political analysis and political strategies,” he says. “A lot of the problems in the world’s health systems, as with other human institutions like Harvard University, are questions of politics.”

Bong-min Yang, a Takemi Fellow in 1989-90 and 1995-96, came from Seoul National University with two other South Koreans to report to the April conference and to learn. Partly to show that Korea was a safe place, in anticipation of the then-upcoming World Cup soccer matches, and in recognition of the huge social costs of traffic-related injuries and fatalities, the government had intervened in several ways to change the behavior of its citizens. In 2000 the police launched a national campaign to persuade drivers to use seatbelts and began to enforce laws exacting a financial penalty for failure to do so. In just eight months, the percentage of drivers using belts rose, astonishingly, from 23 to 98 (versus a 67-percent buckling rate in the United States). Another intervention gave financial rewards to people who reported traffic violations and had photographs or videotapes as evidence. The government started that campaign in April 2001. In that first month vigilant members of the public reported 25,000 violations each day. By August the number was down to 7,000 a day. About 2,000 deaths and 5,000 cases of disability appear to have been averted in 2001 alone.

Deysi Rodriguez, from the National University of Colombia, came with two colleagues, from the Ministry of Transport and from Bogota’s Office of Safety and Congruous Living Affairs. “In the midst of essentially civil war, major improvements have been made in Colombia,” says Reich. From 1996 to 2000, Colombia achieved a 12 percent decline in mortality caused by traffic crashes despite a 23 percent increase in crashes. A new national compulsory-insurance plan guarantees that a victim’s care will be paid for. Now, when one seeks such care, one is more apt to find it. In Bogota, a heavy investment in a mass transit system reduced risky pedestrian traffic. It also made bus drivers salaried employees; no longer was their income based on the number of passengers they transported daily, an incentive system that had encouraged speeding, overloading of buses, and exasperatingly long working hours. In a 20-month campaign called “Zebra Crossing,” police employed mimes to encourage Bogota’s pedestrians to use new crosswalks.

Mark Rosenberg ’67, M.D. ’71, M.P.P. ’72, represented one of the conference collaborators, the Task Force for Child Survival and Development in Decatur, Georgia, of which he is executive director. Crashes create many orphans each year, but children are themselves physically much at risk. The chance of a fatal crash taking a child is about six times greater in low-income countries than it is in high-income ones. “We need safety equity,” said Rosenberg, “but the safety gap between developed and developing countries is widening.”

Reich is now busy seeking funding to continue what has been begun, “to put multidisciplinary teams in a series of countries for five years to get a better understanding of the road-traffic risks to different parts of a population and to implement some relatively low-cost, simple interventions and assess their effectiveness.”

Timothy Evans, a former MacArthur Fellow at the Center for Population and Development Studies and now director of the health-equity program at the Rockefeller Foundation, spoke near the end of the conference. The groups that appear most vulnerable to traffic crashes—pedestrians, public-transit riders, cyclists—are predominantly comprised of poor and disenfranchised population subgroups, people who find it difficult to be heard, and that, said Evans, is a primary reason why road-traffic crashes have been largely ignored in the policy arena. But studies have established clearly, he said, that road-traffic injuries are a major health problem that disproportionately affects people in poor countries. To which Reich replied that “some people look at the studies and see, and some people need to be hit over the head. I was hit over the head.”

Christopher Reed is executive editor of this magazine. The Center for Population and Development Studies maintains an informative website begun for its road-traffic conference, www.hsph.harvard.edu/traffic. A full account by Reich of his own crash and its aftermath may be found in the current Harvard Public Health Review, at www.hsph.harvard.edu/review.