

Injury Statistics, High Risk Groups, and Individuals: *Falling through the Cracks*

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On the Occasion of Receiving the Calderone Prize

The Calderone Prize is a great honor -- not only for me, but for the many people who have been working for years to tackle the injury problem, with their research, teaching, and advocacy. Without them, the field would not have deserved the recognition implicit in the Calderone Prize. Receiving this honor, that has been given to recognized leaders in the battles against such threats as smallpox and AIDS, really puts Injury up there with the 'Big Boys'.

In terms of its prominence, injury certainly deserves to be right up there. Injuries are the leading cause of death in this country well into the fifth decade of life. As a cause of lost working years of life, they are number one for all ages combined. In the dollar cost of injury, we are looking at 400 billion a year.

The problem has received a lot of attention in recent years, but things are still "Falling through the Cracks." I have always been drawn to problems that seem to have fallen through the cracks. Some of these problems, such as injuries in private plane crashes, lead to hundreds of deaths every year -- but are almost totally ignored by the public health community. Some involve people who fall through the cracks because they are the victim of some so-called "freak accident" -- although we have learned that what people call "freak accidents" are usually both predictable and preventable. I once saw a headline "Baptist minister electrocuted in freak accident." It turned out he was standing in a swimming pool to baptize followers, while holding a microphone attached to an electric cord; his death could have been anticipated and prevented.

In retrospect, it is hard to imagine that the problem of highway deaths and injuries could ever have fallen through the cracks of our public health world. But one day in 1967, when I was an MPH candidate at Johns Hopkins, vaguely groping for a focus for my life's work, I drove to our

state capital to hear my husband, Dr. Tim Baker, testify on behalf of the medical society in support of a 'drunk driving' bill. The proposed law was radical 33 years ago; it required motorists to submit to a breath test for alcohol if the police thought they were intoxicated. I listened in amazement as Tim told about 55,000 highway deaths every year in this country, and then the state medical examiner and the state toxicologist testified that more than half of those deaths involved drunk drivers. "Good Lord," I thought – "55,000 deaths every year and I have heard nothing about this in my public health training, and there is no one at the School of Public Health who is doing research on this problem or teaching about it?" Suddenly the path to my future work was clear.

A year or so later I was a very junior faculty member at the School, having received a small grant from NHTSA (the National Highway Traffic Safety Administration) to study alcohol and highway crashes. I also had a place to sit at the Medical Examiner's office in the crowded resident's room, where the residents gave me about 2 square feet of table space. That was also their dressing room, but they would just say "Turn your back Sue, while I change to my scrubs."

Well, at a party one evening during my first year on the faculty, a senior faculty member asked what I was working on. When I said I was doing research on alcohol and highway safety she looked puzzled and asked, "Oh, is that public health? I did not realize at the time that I was blazing a new trail, with a vision that a lot of people would not understand. Fortunately, Dr. Bill Haddon, who was then head of NHTSA and subsequently President of the Insurance Institute for Highway Safety, realized that I had a chance to influence the public health world, and supported my research for more than ten years.

Soon, I was trying to identify the high-risk groups that were in special need of attention. Today much of our focus is on teenage drivers and distracted driving. But in the late seventies I was wondering about babies and toddlers -- were they a high-risk group, theoretically protected in their mothers' laps while daddy drove, or bouncing around loose on the back seat?

At the time, the only statistic I could find about infants and toddlers lumped together all children less than 5 years old who died as car occupants, bicyclists, or pedestrians. Collectively, their death rate was low - much lower than the rate for children in the 5-14 age group. So I prevailed upon the National Center for Health Statistics to make me a data tape with information on all the children less than 15 years old who had died in the United States in 1976-78 with a code of

‘motor vehicle accident.’ That data, including specific age, was dynamite! I subdivided the deaths by single year of age, and by type of victim, and found that for motor vehicle occupants, the very highest death rates per 100,000 population were in the first year of life. And the very first 6 months were the riskiest! From my vantage point in the Medical Examiner’s office, with access to their gold mine of detailed records on all the injury deaths in Maryland, I learned that almost every one of those babies had been held on the lap of an adult in the right front seat.

My discovery that the very youngest children had the highest motor vehicle occupant death rate among all pre-teens was a surprise to everyone. It became a major talking point in the state-by-state battle to require that young children be protected in cars, and by 1985 all states had enacted child passenger protection laws – with my data used in testimony backing many of the laws. Discovery of this high-risk group whetted my appetite for more.

One high-risk group whose injury problems are still falling through the cracks is Native Americans. Statistics show that their motor-vehicle death rates are twice the rates for other Americans, and so are their death rates for many causes of injury. There are exceptions, of course – such as falls on the stairs and house fires, because of the nature of their dwellings. In the early 1980s, my colleague Steve Teret and I led a research project on the Hopi Indian Reservation in northern Arizona. There, two of our preventive medicine residents, Sylvia Simpson and Ray Reid, a Navajo physician, reviewed emergency department records of injured Hopis. We also spent enough time on the reservation to see the environment that was part of the reason for their high rates of injury and death, and to learn about specific individuals who had been injured.

Ever since then it has been my dream to do something significant that might benefit Native Americans. The Calderone Prize will enable me to do exactly that. I plan to use the money to offer support to several graduate students at Johns Hopkins and Columbia for research projects on injuries to Native Americans, in the hope that their findings and their advocacy will lead to policy changes and environmental changes that would benefit Native Americans, such as:

The 3 year old Hopi boy who was bounced out of the back of a pickup truck when it hit a pothole,

Or the Apache father struck by a car, when he was walking along a village road that had no sidewalks and no street lights,

Or the 4-year old Navajo girl who was run over when her mother was backing out of the yard.

The money from sharing the Calderone Prize will come too late to help these three, and it won't help the two Navajo sisters from the reservation in the Northwest corner of New Mexico. They were 17 and 19 years old, the youngest of five sisters who were all basketball players. Earlier this year they were driving home with their parents from a basketball game when a drunk driver rear-ended their vehicle, killing both sisters. The driver had been arrested 17 times for incidents involving DWI or reckless driving. That evening he was driving with a blood alcohol level more than twice the legal limit. Fortunately, New Mexico and many other states are making progress in strengthening their measures against drunk drivers.

One sensible measure would involve increasing the taxes on alcohol – in Maryland, the proposed tax that was just voted down by the legislature would have cost the average beer drinker less than a few dollars a month -- that's an amount too small to be noticed by most drivers, but it's big enough to reduce drinking by teenagers and other people such as Native Americans who don't have a large income. Still another approach would be a lawsuit against 'alcohol pushers' -- particularly those who make money by selling large amounts of alcohol to Native Americans. This legal approach, suggested by Steve Teret, a former trial lawyer, is based on the fact that alcohol is being over-marketed to a high-risk group known for alcohol-related illnesses and injuries, and that the aggressive marketing to Native Americans should therefore be considered a public nuisance.

Alcohol use by drivers is just one of many important injury problems that need to be addressed, and we must continue to go after it with every tool at our disposal. Educational approaches are often the first thing that come to people's minds, and for some injuries they may be the only solution – for example, many infants are smothered every year as a result of sleeping in the same bed with a parent, who inadvertently rolled over onto the baby without waking up. Some parents are not aware of the degree of risk involved when they sleep with an infant, and convincing parents of the danger may be the only way to curb this practice.

Even though education is an essential component of injury prevention, its value can be over-emphasized to the real detriment of safety. This is often true in the occupational setting. For example, back injury is the leading cause of work-related lost time and disability. But too often, employers rely on telling the workers to be careful rather than developing ergonomic approaches – some of which can be pretty simple, such as placing a jackhammer in easy reach rather than

hanging it on the wall over a work bench so a worker has to lean forward in order to grasp the heavy weight .

While back injury is the leading cause of occupational disability, the number-one cause of work-related death on the job is a motor vehicle crash – that’s an occupational problem that has really fallen through the cracks. Too often these crashes are just referred to as ‘accidents’ with emphasis on what the driver did that was wrong, without looking at the need for airbags and other built-in crash protection that is not available in most big trucks and other work vehicles.

To prevent some injuries, we need stronger laws on the books, and we need strict enforcement of those laws. The number of motorcyclists killed on the highways has increased to over 5,000 a year! Many of the thousands of disabling and fatal head injuries in motorcyclists would not have occurred if those heads had been protected with helmets. Tragically, many states have been weakening their helmet laws so they do not apply over age 18, even though most deaths and the highest death rates are among motorcyclists in their twenties and older! Furthermore, enforcement has not been strict enough, in part because it is hard for the police to tell the age of a motorcycle rider. Moreover, states don’t require that the helmet meet acceptable standards, with the result that too often motorcyclists choose to wear cool-looking ‘brain buckets’ that don’t provide protection.

Other illustrations of important laws include the ones being considered by legislatures today to restrict texting and the use of cell phones by drivers – laws with the potential to prevent many thousands of deaths and injuries every year. I am pleased to know that Governor Paterson is pushing for primary enforcement of New York’s law against texting: primary enforcement means that a police officer only needs to see a driver texting in order to make an arrest; it would not be necessary to first cite the driver on a separate charge.

Safety-related regulations are often as important as laws, and can be even more controversial. For example, regulations requiring that dwellings be protected with automatic sprinklers are gradually being adopted – even for single-family homes -- but only against opposition from home builders, who often exaggerate the costs of sprinkler systems and ignore or deny their benefits. The emphasis on smoke detectors has often caused the wonderful saves by sprinklers to go unrecognized, because fires that are quickly extinguished without injury to anyone don’t make the

news. Many people worry about the water damage caused by automatic sprinklers. Well, believe it or not, water from sprinklers is only a tiny fraction of the volume of water that comes out of a fire hose - and believe me, sprinklers cause far less damage than a fire. Until all homes have sprinklers, little children and the elderly or disabled will be at an enormous disadvantage when they have to save themselves rather than being saved by an automatic sprinkler that quickly puts out the blaze with a focused shower.

Most of the things I have mentioned act to prevent injuries, but some things that are falling through the cracks play an essential role after an accident has occurred. In particular, knowledge of first aid and CPR could be saving lives every day – especially the lives of drowning victims. Every year in this country, more than 4,000 people drown. The very highest rates are in one- and two-year old boys. In the past decade, about 3,500 male toddlers in this age group have drowned, many of them under circumstances – such as falling into home swimming pools -- where they could have been saved if only a parent or other nearby adult or teenager knew CPR.

The people at second-highest risk of drowning are males about 16 to 20 years old. Many boys and young men who died were swimming in areas without lifeguards, but usually there would have been at least one other teenager around. Today there are some school districts that require every high school student to learn CPR; just think how many lives might be saved if the ability to perform CPR were required everywhere for high school graduation!

I want to highlight one injury problem that has not fallen through the cracks. Everyone knows about the problem of gun violence, although we are a long way from solving it. Some 30,000 people die every year in the US from a bullet. Most US politicians are afraid of the gun lobby and cater to that special interest group, but Mayor Bloomberg stood up for his convictions. He founded Mayors against Illegal Guns, a group of mayors that is now over 500 strong, to serve as a voice of reason and stand up for public safety. He avoided the dead-end cultural wars of pro-gun vs. anti-gun rhetoric and instead developed solutions that are based on facts, data, and reason. He has helped to expose unscrupulous gun sellers, whether they are licensed gun shops or private sellers who evade gun laws. Using undercover stings and creative lawsuits, these efforts are making it harder for dangerous criminals to get guns easily. Previously, the gun violence prevention forces often seemed to be fighting a losing battle -- until Mayor Bloomberg and Mayors against Illegal Guns stepped in to breathe new life into this public health effort with their fresh ideas and long-term commitment.

In closing, let me again thank Columbia University and the Mailman School of Public Health for awarding me this remarkable prize. It is an enormous honor, and it also gives me an opportunity to focus attention on an entire group of Americans at high risk of injury, Native Americans, who often seem to have fallen through the cracks. I have also tried to draw attention to other high-risk groups. Their statistics may make us cringe, but hopefully, thinking about the individuals at risk of injury or death will inspire us to tackle at least a piece of this tragic problem of needless deaths and disabling injuries.

The problems I have mentioned are just a small part of the overall problem of injury. And the people who are working to solve the problem are just a small part of the universe of people who should be fighting for solutions. It is time for us to enlist everyone who could be contributing, starting with school children. You have probably heard of children who have shamed their parents into fastening their seatbelts, and of teachers who have let their students drop eggs from the school roof after packaging them so they won't break, as an example of how passengers can be packaged against being injured in crashes. Schools could do a lot more: As part of their science curricula, students could develop their own injury prevention strategies, for example as to lab safety and sports.

More and more, students are appearing in legislatures to promote bicycle helmet laws or pedestrian safety when one of their classmates has been killed. We need to make advocates of our young people, so they will write to their representatives, supporting the changes that will free us from injury. Only when we have made advocates of millions of people who understand that injury prevention is far more than telling people to be careful, will we realize the potential for widespread, attainable injury prevention.

Although I am impatient for progress, we must recognize the enormous gains in injury prevention during recent decades:

*in the past 50 years, the highway death rate/100,000 population has dropped by 80%;

*in less than 30 years, the housefire death rate has dropped by two-thirds;

*in less than 30 years, the motor vehicle occupant death rate in infants less than a year old dropped by 40%;

*in 1960 there were 144 deaths from aspirin poisoning in the under-5 age group; but for at least the past 6 years there have been zero deaths.

During these decades we have moved from focusing on who is to blame for an ‘accident’ to developing and employing the science of injury control. Our research has identified many successful injury prevention approaches. But until we apply what we know to preventing injuries – in the way that research on smallpox was applied to its eradication -- injuries will not really be ‘up there with the big boys.’

So our achievements are terrific, but we have a long way to go.