
Posted on Sun, Feb. 18, 2007

New approach could make society safer

C. William Schwab

is professor of surgery at the University of Pennsylvania School of Medicine

and chief of the division of traumatology and surgical critical care

Rose Cheney

is executive director of the Firearm & Injury Center at Penn

Philadelphia is in the midst of a gun-death epidemic. Homicides, assaults and injuries from guns (almost all handguns) have reached appalling levels. Without the region's trauma centers, the toll might be considerably higher. Our leaders seem stymied, with little hope in sight. We need a new approach and new thinking.

Violence is one of our foremost social evils. It invades communities, streets, workplaces, schools and homes. Gun violence, the most lethal form of violence, has a dramatic impact: Victims, families, friends, and entire neighborhoods suffer a lifetime of repercussions after a shooting. Threats of gun violence interfere with the healthy social, emotional, physical and economic development of our youth and society as a whole. The health effects of nonfatal gun injury are enormous: severe psychological suffering and life-changing physical disabilities (including paralysis, traumatic brain injuries and amputations). In the case of young people, ramifications (and health-care costs) persist for decades. Firearm-related deaths contribute to the lag in U.S. life expectancy behind most higher-income nations (30th of 35 countries), according to a study here at Penn.

The medical costs are substantial. In Pennsylvania, hospital charges for firearm-related injuries are more than \$120 million a year. But the economic burden goes far beyond these medical costs, including costs for law enforcement; insurance; security; property values; limits on where we live, work or visit; and other escalating costs to maintain a "civil" way of life.

We argue that violence, and in particular gun violence, should be recognized as a public-health crisis. Look at public health's success in reducing automobile-crash injuries. By collecting detailed data on car crashes and systematically using a wide range of expertise, public-health experts found ways to change our traffic environment, vehicles, behaviors and public policies. They reduced the likelihood and severity of crashes and improved emergency systems, treatments and recovery for victims.

Unfortunately, no such organized approach has been launched for firearm violence. We have huge gaps in knowledge and a critical need for directed public-health research on firearm violence. We desperately need new thinking, better data, and science to guide efforts to make society safer. While trauma teams are increasingly more effective at saving lives after shootings, this is not good enough. We need prevention.

We do know some things that can guide prevention efforts. In many cases, violence is predictable and preventable, and investments in prevention can have cost-effective, sustainable benefits. While the scope and complexity of this epidemic seems daunting, we know that coordinated efforts, both before and after injury, can be effective. Could treating physical and mental illness play a role? Traumatic brain injury, exposure to violence, dietary deficiencies, depression, anxiety or other emotional and physiological problems can lead to increased risks for interpersonal violence and self-inflicted injury. Might medical evaluation and treatments, in clinics, schools, prisons or during probation, prevent some subsequent violence?

Medicine is reaching outside health-care settings to partner with others seeking to reduce risks of repeat or retaliatory violence for victims. Personal or community exposure to violence leads to bad outcomes and perhaps more violence. As we begin to understand the pathways leading to violence, we see a health issue critically linked to unhealthy environments and adverse effects on development. Violent behaviors are complex - emotional, reactive, protective or predatory - and we need to think about each differently. How do physical and mental responses, shaped by a lifetime of

threats, initiate or escalate violent reactions? What would help shut down or avoid such responses before they lead to violence?

How do we address an environmental impact on risks? The epidemiology of gun violence suggests we need to address risks incubated in areas of concentrated poverty. Concerted efforts can counter some adverse influences and improve the safety, health and well-being of the youth in these neighborhoods. Service systems could recalibrate to produce a safer environment - transportation, schools, faith groups, victim services, police, courts, prisons, probation, health and social services, zoning, utilities, and businesses. By reengineering each system to improve safety, small improvements could add up to significant impacts for residents.

The final component of any public-health approach is the mechanism of injury. Can firearms be engineered to be safer? Certainly. And while firearms are excluded from Consumer Product Safety Commission oversight, there are important decisions households can make to reduce the risks of guns at home - not the least of which is on having a gun. Outside the home, public-health research suggests a portfolio of efforts to make guns a liability for criminals and limiting their access to guns. Promising approaches include targeted patrols and stepped-up scrutiny for underground gun markets and gang-related gun use.

Let's turn back to traffic injuries: What can we learn from America's success with motor-vehicle injuries? Initially, these injuries and deaths were assumed to be the inevitable cost of living with cars. Prevention was thought to be too politically and economically costly. But new approaches engaged a wide range of experts and community members. New thinking and systematic efforts starting in the 1960s - and comprehensive-data collection, starting in the 1970s - drove down highway deaths. Safer travel has resulted in more freedom, not less. Would safer communities do the same? Can we address the similar "inevitable" costs of living with guns? Yes.

We know a public-health approach works; it requires collective efforts and sustained investment in real prevention. And we must define the problem in new ways. By moving beyond traditional lines of turf and thinking, we can commit to long-term solutions. But with Philadelphia trauma teams struggling to stop the bleeding, one victim at a time, let's not take too long.

To view an interactive map of 2006 Philadelphia homicides, go to <http://go.philly.com/murdermap>

For the Firearm Prevention & Injury Center at the University of Pennsylvania, go to <http://www.uphs.upenn.edu/ficap>