

VIEWPOINT

Firearm Injuries and Death

The Cost of Shooting in the Dark

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In 1983, I joined the Centers for Disease Control (CDC) in Atlanta, Georgia, to help start a program to use scientific research to understand gun violence as a public health problem. In the 1990s, the National Rifle Association (NRA) killed that program.

Since the massacre in Newtown, Connecticut, the national statistics on gun violence have been widely reported. Firearm-related deaths number more than 30 000 each year, and two-thirds of these deaths are suicides. Tens of thousands more people are seriously injured by guns. Those injuries impose significant burdens for care and rehabilitation on families, communities, and the health care system.

But, we have known little about these deaths other than how many occur each year. We faced a similar challenge 50 years ago when we realized that cars were killing too many of our citizens. In the mid-1960s, the federal government invested hundreds of millions of dollars in research that helped us reduce risks related to motor vehicle crashes. We discovered ways to make cars safer by adding front and side impact protection, seat belts, air bags, antilock brakes, and elevated rear stop lights. We learned how to improve roadway design to make roads safer, and we understood how to make drivers safer by passing stricter laws that could get the majority of drunk and impaired drivers off the road. The results of this research? We saved more than 325 000 lives between 1960 and 2002.

At the National Center for Injury Prevention and Control, we started to do similar research on firearm violence, a problem that accounted for about the same number of deaths as motor vehicle crashes. We wanted to answer 4 questions.

1. *What is the problem?* We wanted to know how many firearm-related injuries occur; where, when, and how they occur; the characteristics of the shooters and victims and the relationship between them; and the circumstances of death and the weapons used.
2. *What are the causes?* What are the factors that increase or reduce risk? We found, for example, that the presence of a firearm in the home, rather than being protective, is associated with a 3-fold increased risk of homicide and a 5-fold greater risk of suicide.
3. *What works?* What practices or policies prevent firearm deaths and injuries? Some simple interventions have proven effective (childproof locks, storing firearms locked and unloaded), but we have not yet studied the impact of most public policies such as gun licensing, registration, background checks for criminal histories or mental illness, or barring access to certain types of weapons or ammunition. We do not know, for example, how death and injury rates are af-

ected by prohibiting gun ownership by felons or by individuals who have been adjudicated as seriously mentally ill.

4. *How do you do it?* How do you implement effective practices and take them to scale? Similar to the challenge of disseminating best practices in medicine, we would like to generate evidence-based practices that could be widely adopted.

We set out to answer these questions by collecting surveillance data on firearm injuries and supporting investigator-initiated peer-reviewed research. Had we done so then, we might have saved many of the more than half-million lives lost to firearm injuries in the last 17 years.

But, the NRA leadership stopped us by misrepresenting our research. They told their members that our research would result in all firearms being confiscated. In 1996, they persuaded a number of Congress members and senators to eliminate firearm injury research at the CDC. Led by Congressman Jay Dickey, a republican from Arkansas, the House removed \$2.6 million from the CDC budget, an amount designated to support a firearm injury surveillance system. Although the Senate restored the money to the budget for other purposes, Congress added language to the CDC's appropriations bill that said no funds could be used "to advocate or promote gun control."

We were in the business of research, not advocacy, but this ambiguous language effectively undermined firearms research. The money that the CDC spent on firearm injury research fell drastically, by more than 95%.

After the child massacre in Newtown, President Obama ordered the CDC to get back to work on firearm injury research. Studies will necessarily involve many subjects in large jurisdictions, with data collected by multiple agencies for long periods. In addition, like the solutions to motor vehicle crash-related injuries, no single approach will address the whole problem. Solutions will be multiple and incremental.

Our research must simultaneously meet 2 objectives. The first is to reduce firearm deaths and injuries; the second is to preserve the rights of legitimate gun owners.

This task is similar to finding a cancer chemotherapy that will both stop tumor growth and preserve that patient's overall well-being. There are plenty of drugs that will stop tumors and shrink them away. If this were our only concern, we would not need research to find new drugs. The problem is that these drugs are toxic, and while stopping the tumor, they also severely damage the kidneys, liver, and heart. If we were not concerned with the tumor's growth and were concerned only with protecting the patient's kidneys, liver, or heart, we might not need research to find new treatments. When we want to both stop the cancer and preserve the

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patient's vital organs, the challenge is much greater and we need good scientific research to find the solutions.

So it is with preventing firearm injuries and protecting gun rights. Ignoring either objective might make research unnecessary. We could disregard the risks of death and injury, and—as the NRA suggests—do nothing to limit access to firearms, the types, number, or way they are sold. Or, we could set aside gun rights and prohibit civilian ownership of firearms. Either of those paths makes easy work for the policy makers.

But, the Constitution—and our duty to protect the lives of family and community members—requires us to pursue *both* objectives and make informed choices. We need research to find out what works to reach both objectives, to find the best way forward.

Our legislators should support our efforts to acquire the same types of evidence that we require the US Food and Drug Administration to examine before approving a new drug or therapy. Lawmakers need such data to understand the risks, benefits, and consequences of mental health regulations and gun laws that seek to protect gun rights while also protecting us, our families, and our communities from firearm injuries and death.

As with new medical treatments, we also need to be wary of arguments driven by ideology rather than evidence. Using evidence, policy makers can in fact save us and our children. In the short, medium, and long runs, the cost of proceeding with our eyes closed will be much more than we as a civilized and caring society can afford.

ARTICLE INFORMATION

Published Online: August 7, 2013.
doi:10.1001/jamapsychiatry.2013.2492.

Conflict of Interest Disclosures: None reported.

CORRECTION

Incorrect Reference

In the Original Article entitled “Long-term Follow-up of a Group at Ultra High Risk (‘Prodromal’) for Psychosis: The PACE 400 Study,” published online June 5 in *JAMA Psychiatry* (doi: 10.1001/jamapsychiatry.2013.1270), an incorrect reference appeared. Reference 82 should have been listed as follows: “Hutton P, Bowe S, Parker S, Ford S. Prevalence of suicide risk factors in people at ultra-high risk of developing psychosis: a service audit. *Early Interv Psychiatry*. 2011;5(4):375-380.” This reference was cited in the text on the seventh page of the article. In the first paragraph of the Clinical Implications subsection of the Discussion, the fourth sentence should have appeared as follows: “Hutton et al⁸² found that 59% of UHR individuals presented with at least mild suicidal ideation and 47% reported at least 1 suicide attempt before being accepted in an early intervention service.” This article was corrected in print and online.