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Commentary

Obstacles To Firearm And Violence Research

by Arthur L. Kellermann

The economic and public health impact of violence in the United States is staggering. Violence played a role in more than one-third of the estimated nineteen million crimes against individuals that occurred in 1991. Homicide is the eleventh leading cause of death in the United States and the fifth leading cause of years of potential life lost before age sixty-five.

Yet despite this frightful toll of pain, suffering, and death caused by violence, we currently lack the necessary scientific basis to implement effective programs for violence control. Given the need for greater knowledge, the impetus for individuals to pursue violence-related research should be great. However, progress toward developing effective strategies for violence prevention has been slow. In this Commentary I discuss six formidable obstacles to work in this field: (1) inadequate funding for violence research, (2) an inadequate pool of experienced researchers, (3) critical gaps in available data, (4) fatalistic attitudes about violence prevention, (5) barriers to interdisciplinary research, and (6) opposition from powerful interest groups.

Inadequate Funding

Federal support. Researchers are faithful adherents to Sutton’s law: Since most depend on grants and contracts to support their activity, it is not surprising that they tend to devote their time and energy to areas of research where funding is most plentiful. Despite the public health implications of violence and firearm-related injuries, federal support for research in this area is distressingly poor. The National Research Council (NRC) Panel on the Understanding and Control of Violent Behavior calculated that the federal government spent only $20 million on violence-related research in 1989. This investment (an average of $3.41 per violent incident) pales in comparison to the cost of these events: $54,000 per rape,

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$19,200 per robbery, and $16,500 per aggravated assault. In proportion to the total years of potential life lost, violence research receives far less support than research directed toward acquired immunodeficiency syndrome (AIDS), cardiovascular disease, or cancer (Exhibit 1).

Access to even this modest level of funding is complicated by the number of agencies currently involved in violence research. According to the NRC violence panel, violence-related research activity is now being supported by no fewer than thirteen different agencies (Exhibit 2). Major sponsors include the National Institute of Justice (NIJ), the National Science Foundation (NSF), the National Institutes of Health (NIH), the National Center for Child Abuse and Neglect, and the Centers for Disease Control and Prevention (CDC). Historically, each of these agencies has considered violence research to be incidental to its primary mission or programmatic focus. As a result, none of these organizations has allocated more than a small fraction of its resources to violence research.

Progress is being made, but much remains to be done. Each of the major federal sponsors of violence research must overcome problems to accelerate work in the field. The NSF funds proposals from a wide variety of academic disciplines, but its decisions are based on neither a long-term research agenda nor an explicit list of priorities. The National Institute on Alcohol Abuse and Alcoholism (NIAAA), the National Institute on Drug Abuse (NIDA), and the National Institute of Mental Health (NIMH) provide more than half of the federal dollars that now support violence research, but the primary focus of each of these agencies encourages investigators to tailor their proposals to the agency rather than to the research question at hand. The NIJ has sponsored some of the most innovative evaluation research in the field, but its research agenda has proved to be vulnerable to

### Exhibit 1
Research Expenditures Per Year Of Potential Life Lost, Selected Causes Of Death

<table>
<thead>
<tr>
<th>Dollars</th>
<th>Violence</th>
<th>Cancer</th>
<th>Heart/lung/blood</th>
<th>AIDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>$31</td>
<td>$794</td>
<td>$441</td>
<td>$697</td>
</tr>
</tbody>
</table>

Source: A.J. Reiss Jr. and J.A. Roth, eds., Understanding and Preventing Violence (Washington: National Academy Press, 1993), 246, Figure 8-1.

a Acquired immunodeficiency syndrome.
political considerations. The recent designation of a Division of Violence Prevention within the CDC’s National Center for Injury Prevention and Control suggests that a broad-based federal research program may soon be forthcoming. Unfortunately, the entire injury-control research program at the CDC has been hampered by erratic and chronically insufficient levels of funding. Although the CDC’s injury-control program recently was elevated to the status of a National Center, this was not accompanied by a proportionate increase in financial support.

Federal funding for firearm-related research has been particularly hard to come by. In 1983 NIH awarded nineteen research grants to study various aspects of five infectious diseases that caused only seventeen cases of illness and nine fatalities in the United States the preceding year. That same year, NIH did not fund even one study of firearm-related deaths or injuries despite evidence that firearms cause approximately 33,000 deaths and 198,000 injuries each year. In recent years the CDC’s injury-control program has proved to be the only consistent source of federal support for

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**Exhibit 2**

Federal Support Of Violence Research, By Agency, Thousands Of Dollars, Fiscal Year 1989

<table>
<thead>
<tr>
<th>Agency</th>
<th>Dollars</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Institute of Justice</td>
<td>$2,570</td>
</tr>
<tr>
<td>National Science Foundation</td>
<td>$953</td>
</tr>
<tr>
<td>National Institute on Alcohol Abuse and Alcoholism</td>
<td>$2,816</td>
</tr>
<tr>
<td>National Institute on Drug Abuse</td>
<td>$2,778</td>
</tr>
<tr>
<td>Indian Health Service</td>
<td>$35</td>
</tr>
<tr>
<td>Centers for Disease Control and Prevention</td>
<td>$1,613</td>
</tr>
<tr>
<td>National Center for Child Abuse and Neglect</td>
<td>$2,029</td>
</tr>
<tr>
<td>Other</td>
<td>$798</td>
</tr>
<tr>
<td>National Institute of Mental Health</td>
<td>$3,824</td>
</tr>
<tr>
<td>Prisons Bureau</td>
<td>$350</td>
</tr>
</tbody>
</table>

Source: A.J. Reiss Jr. and J.A. Roth, eds., Understanding and Preventing Violence (Washington: National Academy Press, 1993), Figure S-1.

- National Science Foundation funds break down as follows: Animal Behavior, $264; Social Psychology, $235; Cultural Anthropology, $105; Law and Social Science, $301; and Sociology, $48.
- Department of Health and Human Services.
- Public Health Service, Department of Health and Human Services.
firearm research. Fortunately, officials at the Department of Justice are expressing renewed interest in strategies to control firearm violence. This may presage a new cycle of activity within the NIJ.

Given growing public concern about the problems of crime and violence, it seems likely that line-item appropriations for specific violence initiatives may be forthcoming soon. Although any increases in federal support are certainly better than nothing, tightly circumscribed requests for proposals are a poor substitute for a well-balanced program of basic and applied research. In the absence of a clear strategy for building the necessary body of knowledge, we may well end up with little more than well-intentioned but piecemeal efforts to control violence. The political imperative to "do something about crime" often leads to the hasty introduction of programs without a plan for their evaluation. Many communities have already launched neighborhood or school-based violence prevention initiatives in the optimistic hope that they will make a difference. Since few have included sufficient resources for evaluation, we may never know if they do.

**Private support.** In the absence of a strong federal commitment to violence research, private charities and foundations are beginning to support needed work. For example, The California Wellness Foundation and five other California philanthropies have pledged more than $20 million to support violence reduction programs in California. The Carnegie Corporation of New York has spent approximately $1.5 million on violence prevention since 1990. The Joyce Foundation in Chicago recently initiated a special project on guns in America, with the specific goal of reframing guns as a public health issue. The Henry J. Kaiser Family Foundation, the Ford Foundation, and other philanthropies also are getting involved. (Elsewhere in this volume Dianne Metzger and Virginia Strand describe private philanthropy's involvement in violence prevention activities in greater detail.) Although the interest of these organizations is belated, it is welcome.

**Funding needs.** An immediate $50 million increase in annual federal funding could dramatically improve the currently bleak picture for violence research. Allocation of a substantial share of these funds to the NIJ and the CDC's National Center for Injury Prevention and Control would permit these agencies to expand their current programs and evaluate new initiatives to control violence. By combining this work with the promising behavioral research under way at NIMH and the NSF, substantial progress could be made. The growing realization that violence and other forms of injury are major contributors to the steady growth of health care costs in our nation should encourage Congress to act. The health care savings alone that could be realized from this investment should more than offset the cost of expanded support for violence research.
An Inadequate Pool Of Experienced Researchers

One unfortunate but predictable consequence of the lack of funding for violence research is the critical shortage of experienced investigators working in the field. The small number of researchers from the minority groups most affected by violence is particularly troubling. This shortage presents funding agencies and foundations with a dual problem. First, if (and when) funding for violence research is increased, the existing pool of experienced investigators may not be sufficient to guarantee a steady stream of high-quality research proposals. Second, without the active involvement of minority researchers, funding agencies may encounter resistance from citizens who question whether violence research is sensitive to community concerns and to the perspectives of minority populations.

Consequently, any coherent strategy to reduce the rate of deaths and injuries due to violence in the United States must include a sustained commitment to identify and train young investigators. Special effort must be made to recruit persons who reflect the diversity of our society. Researchers who are active in the field must devote sufficient time to serve as mentors for the next generation of violence researchers. Funding agencies can support the growth and long-term health of this field by sponsoring graduate and postgraduate programs in violence research, earmarking research funds for new investigators, and giving special incentives to training programs and senior investigators who actively recruit researchers from minority populations.

Critical Gaps In Available Data

Tracking systems. Researchers who study violence are seriously handicapped by the lack of basic information about the frequency of episodes of violence and the prevalence of potential risk factors. Public health practitioners depend on surveillance—the systematic collection of data about disease incidence, prevalence, and risk—to identify emerging problems and to evaluate the effectiveness of countermeasures. Unfortunately, existing data sets to monitor rates of victimization due to violence are limited in their scope and utility. Collection of essential information about firearm-related morbidity and mortality has been ignored altogether.

For example, homicides are now tracked at both the state and national levels, but these data have key limitations. The master mortality files of the National Center for Health Statistics (NCHS) tabulate homicides by method and by the age, sex, and race of the victim, but death certificates lack important information about the incident, the circumstances, the offender, and the type of weapon used. Annual homicide data collected by
the Federal Bureau of Investigation’s (FBI’s) Uniform Crime Reports (UCR) program include basic information about the incident, the weapon, and the relationship of the offender to the victim, but these data are lumped into broad categories that lack precision. Furthermore, since the FBI’s Supplemental Homicide Reports are filed on a voluntary basis and are usually submitted early in the course of an investigation, crucial information about the offender often is lacking. Finally, neither the NCHS nor the UCR data sets tell us anything about the scene of the homicide, any antecedent events, or associated crimes. Information of this sort could paint a much clearer picture than the one that is available now.\textsuperscript{18}

Even larger gaps exist in our knowledge of the impact of serious but nonfatal violence. In addition to homicides and cases of nonnegligent manslaughter, the FBI’s UCR program monitors and tabulates statistics on three kinds of serious but nonfatal violent crime (forcible rape, robbery, and aggravated assault). However, the UCR database includes only crimes that come to the attention of law enforcement agencies and that are voluntarily reported to the FBI. To supplement this important but limited source of surveillance data, the Bureau of Justice Statistics supports the National Crime Victimization Survey, a comprehensive, nationally representative probability sample of approximately 50,000 households.\textsuperscript{19} This survey offers by far the best measure of patterns and trends in household victimization, but it suffers from its own shortcomings. For example, the way the survey is conducted virtually guarantees that rates of youth violence and spouse abuse are seriously underreported.\textsuperscript{20}

\textbf{Methodological problems.} Several methodological difficulties must be overcome if we are to improve our capacity to monitor rates of nonfatal victimization. Well-defined protocols must be devised and implemented to identify victims of battering, child abuse, and other forms of family violence. Once this is done, it should be possible to conduct meaningful surveillance to measure temporal changes in victimization rates and to verify the effectiveness of prevention programs. Better information about the prevalence of potential risk factors for assaultive behavior, such as substance abuse, weapons carrying, and gang membership, also is needed. Baseline surveys are now being conducted, but this kind of information is difficult to obtain. Given strong evidence that youth are disproportionately involved in violence as both offenders and victims, substantial attention must be given to age group. Unfortunately, research involving minors can be difficult to conduct. For example, in most jurisdictions, the names of minors must be omitted from police offense reports before they can be made available for epidemiologic review. Safeguards such as these are understandable, but they seriously hamper needed work.

\textbf{Firearm data.} The paucity of data about firearm-related injuries is par-
titularly puzzling. No federal agency with responsibility for the health of the public has jurisdiction over firearms. Instead, federal regulatory authority resides with the Treasury Department. Given our sketchy knowledge of firearm fatalities and the lack of comprehensive data on the number, type, and distribution of firearms in general circulation, it is not possible to determine with certainty if any brand or type of firearm is disproportionately involved in fatal incidents. Even less is known about the incidence of serious but nonfatal firearm injuries. No existing data set measures rates of injury and long-term disability due to firearms. Juxtaposition of health interview data with the nation’s master mortality files could permit an approximation of the case-fatality ratio for firearm injuries, but questions about gunshot wounds have been omitted from every edition of the National Health Interview Survey (NHIS) since 1972.

This situation could be markedly improved at relatively little cost by implementing three complementary strategies for firearm-injury surveillance. First, a firearm fatality reporting system should be established that is patterned after the National Highway Traffic Safety Administration’s Fatal Accident Reporting system. This would provide us with invaluable information about the circumstances and contributing factors involved in the approximately 33,000 firearm-related deaths that occur each year. Second, questions about firearm injuries and their sequelae should be made an intrinsic part of every NHIS to provide a statistical estimate of the annual incidence and public health impact of nonfatal gunshot wounds. Third, firearm-related injuries should be added to the list of conditions reported by hospital emergency departments that participate in the National Electronic Injury Surveillance System. This program, which is maintained by the Consumer Product Safety Commission, has proved to be extremely useful for monitoring product-related injuries. Ironically, firearms are excluded from the commission’s jurisdiction.

Fatalistic Attitudes Toward Prevention

The belief that violence is an inevitable consequence of modern society can seriously hinder efforts to win the support of individuals and communities for violence prevention programs. Although physicians and other health care professionals routinely treat victims of violence, few have considered violence prevention as part of their sphere of professional activity. Fatalism and apathy can undermine the best-designed intervention. The difficulty many investigators face in winning support for violence prevention interventions suggests that the public has not grasped the potential value of this work. Instead of focusing on the success or failure of short-term, high-profile programs, we need to refocus our efforts and work
to achieve small, incremental change. For example, over the past thirty years slow but steady declines in the rate of smoking have resulted in a substantial reduction in the rate of cigarette-related heart disease.\textsuperscript{23} Progressive refinements in motor vehicle and roadway design have achieved even greater reductions in the rate of crash-related deaths per vehicle mile.\textsuperscript{24} Neither of these changes occurred overnight.

### Barriers To Interdisciplinary Research

The concept of violence as a public health problem is fairly new. Before 1980 the criminal justice system led society’s response to crime and violence. Recently a growing awareness of the limited impact of deterrence, rehabilitation, and incapacitation on violent behavior has led to a broadening of the base of disciplines with an interest in violence prevention and control.\textsuperscript{25} In general, the infusion of new ideas and energy into this challenging field has been positive, but important philosophic and programmatic differences remain. Since criminal justice researchers focus much of their work on understanding and controlling the behavior of the offender, they view public health’s traditional focus on the victim with some skepticism. One police commander put it this way: “You doctors,” he told me, “consider everyone in your emergency department a victim. We [the police] consider everyone a potential suspect.”

Multidisciplinary research is appealing in theory but difficult to implement in practice. Each discipline has its own vocabulary, professional literature, favored research methodologies, and funding agencies. None may be readily accessible to investigators from other fields. For example, few medical school libraries stock any of the wide array of criminal justice journals, and interlibrary loans can take days or even weeks. Each group sponsors meetings to disseminate research findings, but few are attended regularly by practitioners or researchers from other fields. Despite a broad consensus that interdisciplinary research should be fostered, most current research is focused in a single field. As a result, important opportunities for collaboration may be missed, and needless duplication of effort can result.

Fortunately, opportunities for interdisciplinary exchange are increasing as private foundations and federal agencies seek to broaden their sources of expertise on violence-related problems. Sponsorship of interdisciplinary conferences, workshops, panels, and grant review committees can bring together experts from diverse fields to work toward a common goal. Information exchange inevitably leads to new ideas. The professional relationships that develop in the course of these meetings also should generate increased interest in collaborative research.
Opposition From Interest Groups

It may be impossible to pursue violence research without offending one interest group or another. Many people fear that violence research eventually will lead to expanded government control. Neurophysiology studies and, most notably, research into a potential link between genes and violence have proved to be particularly problematic. A conference on genetic factors and crime sponsored by NIH was canceled after a number of African American academics and politicians charged that such research could legitimize racist views.26

Concern over this issue has contributed to the mistaken view that the federal government is funding research to link violence with race. Allegations of racism can have a potentially chilling effect on researchers seeking answers to a problem that has been particularly devastating to minority communities. A recent quote from Peter Breggin illustrates the hostility that can be engendered by violence research:

When you define something as a public health problem among minorities, you imagine them as “carriers” or something. That’s monstrous. This public health approach is just terrible because it distracts from the real problem, poverty and white racism. Most of the money [for violence research] is just going to white bureaucrats who want to study it some more.27

In fairness to Breggin and others, concern about racism in biomedical research is based on historical precedent. The incident most often cited is the infamous Tuskegee Syphilis Study, which was funded by the U.S. Public Health Service between 1932 and 1972. In the course of this study, researchers denied treatment to 412 African American men who tested positive for syphilis in order to study the natural history of the disease.28 The safeguards introduced in the wake of Tuskegee should preclude abuses of this sort in the future, but the legacy of this shameful episode will linger for years to come.

The debate over the proper role of public health in violence research underscores the need for researchers to be sensitive to and informed by the larger social context of violence. Marked economic and social disparities contribute to violence in basic ways. Scientists studying violence must undertake research to document the roles of poverty, ignorance, and racism as triggers for violent behavior. The magnitude of these societal problems should not deter efforts to more clearly understand their etiologic role.

Few lobbies are as organized or powerful as are the opponents of gun control.29 Unfortunately, it is not possible to address the problem of violence in the United States without studying the role of guns. According to the National Crime Victimization Survey, handguns were used to commit
more than 800,000 crimes in 1990. Each year, firearms kill more than four times the number of black teenage males than all natural causes of death combined. And in Texas and Louisiana, guns now exceed motor vehicles as the leading cause of fatal injury.

Ironically, many people consider guns to be part of the solution to violence rather than part of the problem. This viewpoint is best illustrated by a 1988 paper, “Crime Control through the Private Use of Armed Force.” In the heated atmosphere that surrounds gun control, firearm researchers tend to be judged by the acceptability of their findings rather than by the rigor of their methods. After one team of investigators published a study that linked higher rates of homicide with readily available handguns, the research director for the National Rifle Association (NRA) demanded that two of the study’s authors be investigated by the NIH office of scientific integrity. His petition was dismissed following internal agency review.

The NRA also has sought to block further firearm-injury research. Shortly after the study described above was published, the NRA published a blistering attack in its official journal, American Rifleman. On the same page the NRA encouraged concerned members to write to the assistant secretary for health to protest “the use of federal tax dollars by the Centers for Disease Control to conduct anti-gun pseudo-scientific studies disguised as research into the ‘epidemiology of violence’.”

Progress can, and will, be made if public health investigators succeed in shifting the debate over firearms and violence from the political to the scientific arena. It is likely, however, that efforts to derail this process will intensify if a growing body of research fails to support the long-held beliefs of the gun lobby. Researchers who work in this field must take special care to ensure that their studies meet the highest standards of scientific integrity. Funding agencies and foundations must also be prepared to withstand pressure to abandon their support of firearm-injury research. Clear communication of research goals and oversight procedures will blunt much of this criticism. The need for accurate and objective information must override any short-term political considerations.

**Conclusion**

Although these obstacles represent formidable barriers to firearm and violence research, they are counterbalanced by powerful incentives to enter this field. Violence prevention is largely an unexplored frontier. The opportunity for individuals to make important contributions that could someday improve the health of millions of Americans is unsurpassed in other fields of research. Researchers in medicine and public health have much to learn
from their colleagues in criminal justice, sociology, economics, the behavioral sciences, and public policy. They also have much to give. As support for violence research grows, I have great hope that this work will lead to a better quality of life for future generations.

NOTES

4. Ibid.
6. Reiss and Roth, Understanding and Preventing Violence.
7. Ibid.
13. Reiss and Roth, Understanding and Preventing Violence.
20. Reiss and Roth, Understanding and Preventing Violence.


35. Taubes, “Violence Epidemiologists Test the Hazards of Gun Ownership.”